The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LX, No. 17 CHICAGO, ILLINOIS APRIL 26, 1913

THE DANGER AND PREVENTION OF SEVERE CARDIAC STRAIN DURING ANESTHESIA *

W. D. GATCH, M.D.
DEWELL GANN, A.B., AND F. C. MANN, A.B.
INDIANAPOLIS

We started the investigation which is here reported to determine the effects of the Trendelenburg position on the circulation and respiration, and to formulate rules for its safe employment. We had become convinced from cases observed by ourselves, and from communications from a large number of surgeons and anesthetists, that this posture may at times endanger the life of the patient during anesthesia. Our experiments, checked by clinical observations, have demonstrated, to our own satisfaction at least, that this conclusion is correct. But they have also shown that the Trendelenburg position is only one of several agencies which act in the same manner, namely, by increasing to a dangerous extent the flow of the blood to the heart. A study of cases of death during anesthesia under present-day conditions of surgery will show, we think, that more fatalities result from this cause than from its opposite — diminished supply brought about by hemorrhage or so-called surgical shock. The most important of the agencies of which we are speaking are the Trendelenburg position, forcible pressure on the abdominal viscera and struggling.

In operations on man these causes frequently act together, but in our experiments we have sought to study the effects of each separately. The danger of an overfilling of the right side of the heart is greatly increased by asphyxia. Hence we have considered the effect of obstructed or arrested breathing on each of the conditions just enumerated.

THE TRENDELENBURG POSITION

A gynecologist of wide experience once stated to us that he knew of no more certain way to kill a fat woman than to leave her for some time in the high Trendelenburg position. Our own observation has been that the head-down position is badly borne by patients with cardiac disease, or by those with obstruction to the breathing. The two cases reported below illustrate the effect of the position in such cases. We could report several others of a similar kind.

CASE 1.—The patient[1] was a man with aortic and mitral insufficiency and a pericardial effusion first discovered at autopsy. While lying flat he was anesthetized with gas-oxygen and ether, and then placed in the lithotomy position with his pelvis well elevated. The anesthetist reported that the patient's condition was excellent until he was placed in this position. His color at once became cyanotic and his breathing poor. He died before it was possible to remove him from the table.

Death was probably due to overdistention of the right side of the heart, complicated, perhaps, by some interference with the respiration.

CASE 2.—A man of 65, very fat, but with a circulatory apparatus apparently in good condition, was etherized and placed in the high lithotomy position described above. His breathing, somewhat obstructed from the start, became poor, his color cyanotic and his pulse rapid and weak. He was immediately taken from the table and placed flat on a stretcher. His condition at once improved. He was etherized somewhat more deeply and again placed on the table, but this time with very slight elevation of the pelvis. The operation was then completed without further trouble. In this case also the cardiac strain was increased by asphyxia.

The literature in clinical journals on the effects of the head-down position is rather meager. Kraske[2] reports two cases of suprapubic cystotomy, in both of which there were postoperative intestinal obstructions. One patient recovered without operative interference, the other required operation and came to autopsy. The omentum was found incarcerated in the upper part of the abdomen, obstructing the transverse colon and pressing on the gastric and portal veins. Hematemesis had been present, and gastric ulcers were found which were supposed to be due to the obstructed veins.

Kraske attributed the trouble in both of these cases to displacement of a fatty omentum produced by the Trendelenburg position during operation. So far as we can discover no cases similar to these have been reported. Kraske in the same paper also reports two cases of postoperative heart failure, which he thinks was caused by overdistention of the heart, produced by the head-down position.

Franz,[3] from observation on fifteen patients while they were in the Trendelenburg position, doubts that this posture causes any noteworthy changes in the circulation, but thinks that it interferes markedly with the ventilation of the lungs. He states that the decreased oxidation caused by the head-down position must, if long continued, cause serious damage to the entire organism, and most of all probably to the central nervous system. He observed that the patient always showed a marked decrease in respiration if suddenly placed in the head-down posture, and cautions against doing this.

Joyle[4] attributes the danger of the position to the excessive strain which it throws on the heart.

Leonard Hill was the first to investigate in a thoroughgoing manner the effects of gravity on the circulation

* From the Laboratory of Experimental Surgery of Indiana University School of Medicine.

1. This is the patient whose death was reported as Fatality 2 by W. D. Gatch, The Use of Rebreathing in the Administration of Anesthetics, THE JOURNAL A. M. A., Nov. 11, 1911, p. 1593.

2. Kraske: Beckenhochlagerung und ihre Gefahren, Arch. f. klin. Chir. (Langenbeck's), 1903, lxxi, 453.

3. Franz: Nachteile den Beckenhochlagerung, Zentralbl. f. Gynäk., 1903, xxvii, 969.

4. Joyle: La mort et les accidents provoqués par a position déclive en chirurgie abdominale, Presse méd., September, 1903, p. 158.

and respiration.[5] His conclusions have been generally accepted and our experiments served to verify them in every particular. Using morphin to anesthetize the animals, he found that in the dog and cat the blood-pressure falls in the carotid artery under the influence of gravity in the head-up posture, and rises in the feet-up posture; that compensation for these effects takes place more or less in normal animals by vasoconstriction in the splanchnic area in the head-down position, with cardiac acceleration in some cases, and by cardiac inhibition and by vasodilatation in the feet-up position. Salathé, quoted by Hill, found that rabbits are killed by the feet-down position in from fifteen minutes to two hours, the animals practically bleeding to death into their splanchnic veins. Hill also showed that when the vasomotor tone is abolished, the respiratory movements can still compensate to some extent for the effect of gravity on the circulation. This compensation is accomplished in the feet-down position by a contraction of the abdominal muscles, which serves to compress the splanchnic vessels, and by deep thoracic inspirations which serve to aspirate blood into the heart. In the feet-up position it is brought about by a relaxation of the abdominal muscles, and by diaphragmatic inspiration, this type of inspiration favoring the accumulation of blood within the abdomen and thus protecting the heart against overdilatation. In the monkey, Hill found that the effect of the vertical position under morphin is to raise the blood-pressure. This effect is due to the more highly developed vasomotor mechanism of this animal. When, however, the monkey's vasomotor tone is abolished, this animal is affected in the same manner as the dog or cat. Such abolition of vasomotor tone is quickly brought about by chloroform anesthesia, and much less rapidly by ether anesthesia.

Hill demonstrated that in the approximately normal animal the head-down position can be maintained for hours without ill effects. This, we shall show, is not the case if the animal is anesthetized with ether.

EXPERIMENTS ON THE EFFECTS OF THE TRENDELENBURG POSITION

Our experiments were performed on dogs. Ether without any morphin was used to anesthetize them. The ether was given by means of a can, through a hole in the side of which ether could be added drop by drop. This method in the hands of the same anesthetist who gave the ether in these experiments has been used in the laboratory for a long time and with very few fatalities under ordinary conditions. A record was taken of the respiration and blood-pressure with the animal in the horizontal position. The dog was then placed in a Trendelenburg position of from 45° to 50° and a continuous record taken throughout the remainder of the experiment. The effects of the head-down position were positive and startling, and at first we were at a loss to explain them. Only four of fifteen dogs lived in this position more than an hour and a half unless revived by artificial respiration. One dog died in three minutes, another in five minutes. The average time of survival for the entire series was about twenty minutes. The animals which showed the greatest resistance were all young. It was noteworthy that nearly all the dogs died while very lightly etherized; many of them when the ether had been entirely removed. The records showed almost invariably the same results. The change to the head-down position caused a slight rise in blood-pressure, a slight increase in the pulse-rate, and little or no change in the rate of respiration. The breathing became more labored, however, and assumed a diaphragmatic character. The abdominal muscles were relaxed. While the animal remained in the abnormal position its pulse and blood-pressure showed practically no change till the respiration failed. This invariably occurred sooner or later. After marked variations

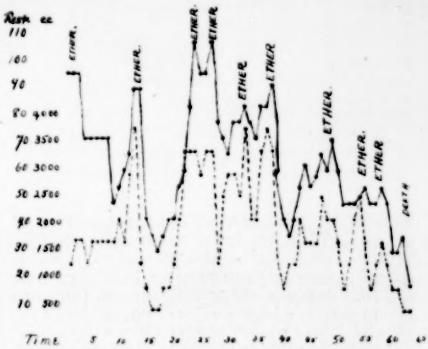


Fig. 1.—Chart showing rate of respiration (solid line) and amount of air inspired per minute (broken line) by a dog under light ether anesthesia. The ether was given in very small amounts. Note the enormous decrease in pulmonary ventilation after each administration. For the first ten minutes the dog was in the horizontal position, for the remainder of the experiment in a Trendelenburg position of 45 degrees.

the breathing would weaken and gradually cease. When this occurred the heart would always continue to act normally for a time, and the blood-pressure would rise or remain at the same level, but at the end would abruptly sink to the base-line, death taking place in from one to two minutes after the respiration had ceased. If the dog were lowered and given artificial respiration as soon as the blood-pressure began to fall, it could usually be revived. We succeeded in bringing around a few animals without lowering, by artificial respiration alone, begun as soon as natural breathing ceased. As soon as it started to breathe its blood-pressure would quickly rise to the former level, and the dog's condition would become perfectly normal. The animal could now be placed a second time in the Trendelenburg position, when an exactly similar series of results would occur.

What is the cause of death in these experiments? We can safely conclude that it is primarily failure of the respiration, for the heart-action remains good and the blood-pressure high until after the breathing has ceased. But what causes the respiration to fail? At first thought this would seem to be brought about by fatigue of the diaphragm, which in the Trendelenburg position has to lift the abdominal viscera at each inspiration. But this explanation is excluded by the fact that a dog under morphin narcosis will live for hours in the head-down position without any sign of fatigue of the diaphragm — a fact demonstrated by Hill and verified by ourselves. We are driven to the conclusion that the failure of the respiration is in some way caused by the ether, since it does not occur when morphin is used instead, and furthermore that it is due to some action on the respira-

5. Hill: The Influence of the Force of Gravity on the Circulation of the Blood, Jour. Physiol., 1895, xviii, 15. Hill and Barnard: Jour. Physiol., 1897, xxi, 323. Hill: Advances in Physiology, chapter on Vascular System and Blood-Pressure, Edward Arnold, London, 1909.

tory center. We can derive no evidence from our experiments for the belief that respiratory failure in dogs under ether is more common in the Trendelenburg position than in the horizontal position. But we have found, we believe, conclusive proof for the opinion that a partial or complete failure of the respiration is made much more dangerous by the head-down position.

Dogs under ether administered with a free supply of air show enormous variations from minute to minute in the amount of their pulmonary ventilation, and are extremely liable to sudden complete arrest of breathing. This fact is shown by the chart (Fig. 1), the curves of which represent the rate of respiration and amount of air inspired per minute by a dog under light ether anesthesia. From four experiments of this kind we have found that the pulmonary ventilation is just as good in the Trendelenburg as in the horizontal posture.

This sensitiveness of the dog's respiratory center to the action of ether affords, we believe, the explanation of the death of our animals. As long as the dog's breathing is good it withstands the head-down posture without ill effects. Whenever the breathing fails, partially or completely, the position greatly increases the danger. Then the heart, poorly supplied with oxygen, has to pump a supply of blood, made much greater than normal by the action of gravity, against a blood-pressure elevated by asphyxia. If the heart is weak even a partial failure of the breathing, which in the horizontal position would pass unnoticed, may prove fatal in the Trendelenburg position. Several of our records show a failure of the heart while slight respiratory movements were still being recorded.

The record shown in Figure 2 was obtained from a dog in the horizontal position by pushing the ether till respiration ceased. The ether was then removed and the dog resumed spontaneous breathing. The ether was then given again, and this time was not removed when respiration ceased; but the heart continued to beat normally for nine minutes. In the control experiment with the dog in the Trendelenburg position the ether was pushed until the breathing ceased and was then removed. The heart failed and the dog died in less than two minutes. In over thirty failures of the respiration in sixteen dogs in the head-down position we observed only once a spontaneous recovery.

If the ill effects of the head-down position in dogs are due primarily to failure of the respiration, they should be obviated if the respiration is kept stimulated by hypercapnia. This we found to be true. Furthermore, we find that a hypercapnia protects the animal to a surprising degree against respiratory failure from an excessive dose of ether. The curves of the tracing (Fig. 3) were obtained by making a dog rebreathe into a closed bag to which from time to time limited amounts of fresh air were supplied. When the breathing had been stimulated to the maximum extent the dog was overwhelmed with ether by immersing an ether bottle connected to the bag by rubber tubing in boiling water The breathing was stopped even by this means with some difficulty and was quickly resumed when the bag was disconnected from the animal's trachea. The animal then breathed very rapidly for a time and recovered its reflexes in three minutes. This shows the effect of increased pulmonary ventilation in ridding the blood of ether.

In some dogs under ether the diaphragmatic breathing stops while thoracic breathing is continued. The mediastinal septum of the dog is so lax that as soon as its diaphragm ceases to contract when the animal is in the head-down posture all its abdominal organs sink into its thorax. The effect, therefore, of breathing of this type in the Trendelenburg position must be to aspirate the abdominal viscera into the chest, and partially to prevent the ingress of air.

We found that as a rule dogs whose phrenic nerves had been cut quickly succumb in the head-down posi-

Fig. 2.—Record taken on revolving drum of the blood-pressure in the carotid artery. The upper line in the tracing records the blood-pressure, the lower line the respiration of a dog in the horizontal position under ether anesthesia. At *A* the ether was being forced. At *B* the breathing ceased and the ether was taken away. At *C* spontaneous breathing began and the ether was again forced. At *D* the breathing failed a second time and the ether was not removed. *E, E* represent slight respiratory efforts. At *F* the heart first began to fail. Note the extreme length of time—nine minutes—during which the heart continued to beat after the breathing had failed at *D*. In the control dog in the Trendelenburg position the ether was forced until breathing ceased and was then removed. The heart failed in less than two minutes and before spontaneous breathing was resumed.

Fig. 3.—Tracing showing the effect of rebreathing in protecting against respiratory failure from an excessive dose of ether. The upper line records the blood-pressure in the carotid artery, the lower line the respiration. The dog's trachea was connected with a rubber bag into which it rebreathed until its respiration was greatly stimulated. At *E* the animal was given a tremendous dose of ether by immersing an ether bottle, connected with the rubber bag by tubing, in boiling water. At *F* the breathing failed and the bag was disconnected from the trachea. Note the fall of blood-pressure at this point and the rapid recovery of respiration and blood-pressure after the removal of the ether.

tion, the time of survival in four experiments being 12½, 10½, 5 and 12 minutes, respectively. One dog, however, lived an hour and twenty minutes in the Trendelenburg position with both phrenics cut. This animal, however, had just given birth to pups and perhaps this fact may account in some way for its survival.

In man a cessation of the action of the diaphragm in the course of anesthesia is not infrequently observed. Hewitt speaks of it as a sign of impending danger. In the Trendelenburg position it must be doubly dangerous, but probably not so perilous to man as to the dog, since the human mediastinum is a much more rigid structure than that of the dog, and must therefore prevent the abdominal organs from sinking so deeply into the thorax. As a further control of the results we performed the following experiment:

Fig. 4.—A tracing of the carotid blood-pressure obtained from a dog under deep ether anesthesia, with its thorax open and its respiration maintained by means of a bellows connected with its trachea. At *A* the bellows was stopped. Note the rise of the blood-pressure and the long powerful beats of the heart. At *B* the blood-pressure began to fall and at *C* had almost reached the base line. The heart at this time was greatly dilated. The long vertical line at *C* represents the time during which the drum was at rest and the heart was being revived by massage and renewed ventilation of the lungs. At *D* the heart was acting well and the blood-pressure was at its normal level. At *E* the bellows was stopped a second time. Contrast the rapid failure of the heart which then occurred with the slow failure during the first period of asphyxia after *A*.

A dog was well etherized and its thorax opened widely so that the heart could be observed, while artificial respiration was given by means of a bellows. The animal was then placed in the head-down position, the artificial respiration stopped, and the time required to bring the heart to a standstill noted. This for four different dogs was as follows: 2¾, 4½, 3½ and 4¾ minutes, an average of 3 9/10 minutes. The same experiment was tried on three dogs in the horizontal position. The results in this series were 9 minutes, 6½ minutes and 8 minutes, an average of 7 8/10 minutes. These results clearly show that during asphyxia, when there has been no loss of blood, the head-down position is injurious to the heart.

In these experiments the lungs were always well ventilated just before the artificial respiration was stopped. This accounts for the fact that the heart was able to hold out for so long a time. In the experiments described previous to these there was a partial degree of asphyxia before the breathing ceased entirely.

In all the dogs of this series we were able to revive the heart by massaging it and starting the artificial respiration. But although its condition, as shown by direct observation of its contraction and by the level of the blood-pressure, was apparently normal, unmistakable evidence that it had been seriously injured by the overdilatation and asphyxia was obtained. After revival, if the artificial respiration was stopped a second time, the heart, instead of giving the long forceful beats which it gave during the first period of asphyxia, gave rapid incomplete contractions and, greatly dilated, ceased to act in less than two minutes. Here we have proof of the truth of the belief that a period of serious cardiac strain during anesthesia may temporarily at least, and probably permanently, injure the heart. The following case, related to us by an anesthetist, is instructive in this connection:

A middle-aged woman in rather poor health but with no apparent cardiac disease was etherized for a pelvic operation. She was placed in the Trendelenburg position and her intestines, packed off with gauze pads, were firmly retracted upward. Some difficulty in obtaining muscular relaxation was experienced so that the ether had to be forced. The patient ceased suddenly to breathe in the early part of the operation and her pulse became imperceptible at the wrist. She was revived by artificial respiration and the operation completed. The patient was then returned to her room in what was regarded as a fair condition. Six hours later, however, she suddenly died of acute cardiac failure.

THE EFFECT OF STRUGGLING

We have investigated this in the following manner: A dog's thorax was opened under the conditions described, except that the animal was anesthetized so lightly that during asphyxia it would struggle, although the anesthesia was deep enough to prevent pain. With each forcible contraction of the abdominal muscles the right auricle and ventricle could be seen to balloon out to great size, showing to what extent the blood in the abdominal veins was being squeezed into the thorax. Under the dreadful strain the heart would quickly become overdilated and cease to contract (Fig. 4). In no one of the four dogs on which this experiment was tried did the heart continue to act for more than one minute. Besides overdilating the heart in this manner, muscular contractions by using up the oxygen in the blood rapidly increase the degree of asphyxia. A patient with a powerful muscular system is prone during anesthesia to reflex spasms of the respiratory muscles accompanied by violent struggling — particularly the conditions investigated in our experiments.

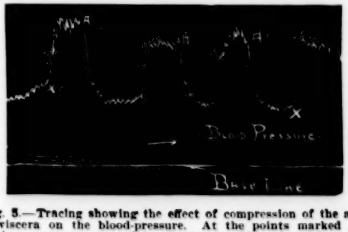


Fig. 5.—Tracing showing the effect of compression of the abdominal viscera on the blood-pressure. At the points marked *X* the intestines were compressed by the hand within the abdomen, and at the points marked *A* the pressure was released.

THE EFFECT OF PRESSURE ON THE ABDOMINAL VISCERA

Roy and Adami[6] found that compression of the abdomen increases the output of the heart 29.6 per

6. Roy and Adami, Brit. Med. Jour., December, 1888.

cent. The abdominal veins can contain all the blood of the body. When, therefore, the intestines are packed off with gauze and retracted upward, as in the case reported above, it is reasonable to suppose that the heart has to handle a greatly increased amount of blood. The effect of this procedure on the blood-pressure of a dog is shown in Figure 5.

INTERPRETATION OF RESULTS

Physiologists generally recognize the importance of muscular movement in maintaining the circulation. It is especially important in man because of his upright posture. The matter is thus stated by Hill:[5]

> **The function of the heart is to drive the blood into the capillary bed, the function of the arterioles is to regulate the distribution and switch the current on to one or other part of the capillary bed and limit the pooling of the blood under the stress of gravity; the function of the skeletal muscles and respiratory pump, aided by the valves in the veins, is to drive the blood back from the capillary bed to the heart, to prevent hypostatic congestion, and to act as a pump to the vascular system of no less importance than the heart. The respiratory pump may even drive the blood through the right heart and lungs.**

Under the conditions of normal life the actions of the heart and of the vasomotor and respiratory mechanisms and their muscles are so nicely correlated that the circulation is maintained without subjecting the heart to any undue strain, even by violent exercise or the head-down position. When a man hangs head downward the blood-pressure in his brachial artery is but slightly elevated above its level in the recumbent posture, although the hydrostatic pressure of a column of blood reacting from the foot to the heart of a man 6 feet tall is almost equal to his normal blood-pressure. The compensation in this case is brought about by vasodilatation and by lessened cardiac output (Hill), and we may add that by muscular relaxation the increased flow of blood to the heart caused by gravity is reduced to the least possible amount. The dilatation of the arterioles allows the blood to accumulate in the capillaries, especially in the capillaries of the abdominal organs. The muscular relaxation prevents compression of the sponge-like capillary network which would force an increased quantity of blood to the heart. We have already pointed out that the abdominal walls are relaxed in the head-down position. Before the days of anesthetics patients were rendered unconscious during short operations by first holding them head downward and then suddenly reversing this position. The effect of the head-down position is to relax the arteries and to accumulate the blood in the capillaries of the abdomen and legs. If when this has occurred the position is suddenly reversed, the capillaries cannot give up their blood rapidly enough to the veins to supply the heart. Hence a brief period of cerebral anemia and unconsciousness results.

During muscular exercise the vasomotor mechanism switches an increased supply of blood into the muscles, while their contractions pump the blood rapidly into the veins and to the heart. Meanwhile the increased respiration keeps the blood well supplied with oxygen and removes the waste products from it.

From a consideration of the facts just stated we are in a position to explain the phenomena noted in our experiments and observed at times in the course of anesthesia in man. In normal men or animals under anesthesia the head-down position has no ill effects provided the respiration is adequate and the muscles at rest. When, however, the breathing becomes insufficient the entire mechanism, wherewith the body compensates for the effects of gravity on the circulation, is deranged. The asphyxia injures the cardiac muscle and raises the blood-pressure. The head-down position at the same time insures that every drop of blood which passes through the capillaries of the abdomen and legs will quickly return to the heart — a condition not present when the asphyxia occurs with the body in the horizontal or upright position. The heart then has to pump a supply of blood at least normal against an increased arterial pressure, at a time when it is poorly able to respond to the increased strain. If the patient at this time struggles, or if pressure is made on his intestines, the state of affairs is rendered much worse.

PRACTICAL APPLICATIONS

We are concerned in this paper primarily with the return of blood to the heart. We have shown that this return may at times be so excessive as to subject the heart to an undue strain. The common agencies whereby this is brought about are the head-down position, pressure on the abdominal viscera, and struggling. The action of these is rendered much more harmful by asphyxia. In fact, we are probably safe in saying that in the entire absence of asphyxia these agencies cannot injure a normal human heart. The problem of practical anesthesia is to reduce to a minimum the harmful influences under discussion. Trusting that the evidence presented has been sufficient justification for our conclusions, we shall now state the means whereby in our opinion this can be accomplished.

It will be sufficient to consider three classes of patients who are peculiarly liable to be injured in the course of anesthesia by overdistention of the heart: those with a well-developed muscular system, those who are alcoholic, and those who have disease of the circulatory apparatus. Patients of all these classes should be given from 1/6 to ¼ grain of morphin and 1/100 grain of atropin half an hour before operation. Kocher advises that alcoholics be given whisky or brandy shortly before taking their anesthetic. We have found this a great aid in anesthetizing them. The preliminary use of morphin and alcohol does a great deal to allay struggling in the early stage of anesthesia.

It is all too common a practice to try to anesthetize a robust or alcoholic man without the aid of any foregoing medication. Attempts of this kind are responsible for not a few deaths — of which we have personally seen one. The trouble in these cases arises from the liability to prolonged spasm of the respiratory muscles, and to the struggling. We have already discussed sufficiently the dangerous character of this combination. If after a long fight during which the patient is constantly cyanotic he is finally "put under," it may be at the expense of a serious injury to his heart. In view of our experiments on overdilatation of the heart during asphyxia, it is not unreasonable to attribute many cases of sudden postoperative death to injury of the heart during anesthesia. It is a rule which should never be departed from that a patient during anesthesia must not be allowed to become cyanotic. It is better to spend half an hour etherizing a man of the type we are discussing and put him to sleep without cyanosis, and if this is impossible even to defer the operation, than to anesthetize him at the cost of a deep cyanosis of two minutes' duration — a degree of asphyxia which under the circumstances may be sufficient to stop his heart.

We have never seen a patient who, with proper preparation, could not be etherized without cyanosis.

Patients with cardiac disease by their own behavior in the conscious state furnish us a clue to their management under anesthesia. They prefer a sitting posture and keep very quiet. The sitting posture diminishes the pulmonary congestion, aids the breathing and prevents pressure of the abdominal organs on the heart, and any rush of blood from the engorged splanchnic veins to the heart. The quiet condition of the muscles reduces oxidation and hence the need of the body for arterial blood to a minimum. We should therefore anesthetize patients who are known or suspected to have cardiac or vascular disease while they are in a semirecumbent or sitting posture, and every precaution should be taken by means of a preliminary dose of morphin, and cautious, slow administration of the anesthetic, to put them to sleep without the least struggle. To do this is the main problem in their management. The depth of anesthesia should be enough to produce a moderate degree of muscular relaxation. This will prevent any reflex movement or reflex stoppage of the respiration. Patients of this class should never be placed in the Trendelenberg position.

Patients with exophthalmic goiter, on account of their cardiovascular disturbances, should be considered here. The pain and excitement of operation under local anesthesia renders this, in our opinion, more dangerous to them than a carefully given general anesthetic. The administration should be managed as in other cardiac cases. The practice of operating on them under ether anesthesia so light that they will respond to questions works well, it is true, in many cases; but it is fraught with danger because of the liability of the patient to retch and struggle. A fatal asphyxia may occur while vomitus is being removed from the patient's throat.

We have already written of the advantage of rebreathing in the anesthetization of cardiac patients. This can best be secured by the use of some simple form of gas-oxygen-ether apparatus like that of Gwathmey, Flint or our own; or if this is not at hand, by the use of a drop-ether mask which will prevent a too ready exchange of air.

Patients with pneumonia or empyema should be managed in the same manner as patients with cardiac disease.

CONCLUSIONS

1. The Trendelenburg position is harmless for patients with normal hearts, provided their respiration is free and unobstructed. In case of partial or complete failure or obstruction of the respiration, the patient should at once be placed in the horizontal or semirecumbent posture.

2. The Trendelenburg position should be used only with the most extreme caution in cases of cardiac disease.

3. To prevent a too sudden inflow of blood to the heart the patient should be placed gradually in the Trendelenburg position, and to prevent a sudden failure of the circulation the patient should be gradually lowered.

4. The effect of struggling and of pressure on the abdominal viscera is to increase greatly the strain on the heart. These agencies also are harmless to injure patients with normal hearts and arteries, provided the breathing is adequate to prevent cyanosis.

5. During asphyxia all of the three agencies considered tend to produce a rapid dilatation of the right side of the heart. A heart once overdilated while in a state of asphyxia is temporarily, and possibly permanently, injured. This is suggested as a possible explanation of certain cases of sudden postoperative death.

6. Robust patients should be given morphin, and alcoholic patients morphin and alcohol before operation, and should be anesthetized without being permitted to become cyanotic.

7. Patients with cardiac disease, pneumonia or empyema should be given morphin before operation and should be anesthetized cautiously and slowly in the sitting or semirecumbent posture.

8. The production of a hypercapnia protects to a marked degree from respiratory failure during anesthesia, and hence from the harmful effects of the agencies which promote a free supply of blood to the heart. Under ether certainly, and probably under nitrous oxid, cardiac failure is always secondary to asphyxia.

9. Morphin and moderate ether narcosis does not impair vasomotor tone in man. Hence in the absence of hemorrhage the semiupright posture is not harmful to man under this form of anesthesia.

A CASE OF CONGENITAL HEART DISEASE *

GEORGE E. EBRIGHT, M.D.
Instructor of Medicine, University of California, Medical Department
SAN FRANCISCO

The presentation of this case of congenital heart disease is possibly of academic rather than practical interest:

History.—Mr. G. R., aged 35, was admitted to the University of California service in the San Francisco Hospital, for varicose ulcers of both legs. His father had varicose ulcers and veins at the age of 30, and one brother has varicose ulcers. According to the patient's mother, he was born at full term and was black until he was 6 weeks old, after which his complexion cleared. Clubbing of his fingers was first noticed when he was 8 or 10 years old. He has had measles, whooping-cough, and about fifteen years ago had "quinsy sore throat" during two or three winters. About a year ago he had facial erysipelas.

The patient has been spasmodically a heavy drinker. He has noticed that the condition on his legs is worse when he drinks, and that also under the same condition he sometimes expectorates blood.

Examination.—The patient's hands and face have a cyanotic duskiness. His fingers and toes are markedly clubbed, his chest is of a peculiar emphysematous type (Fig. 1), not like the barrel chest which is usually seen with advancing years, but one with a short vertical dimension and with a peculiar round cross-section, as if his thorax had remained of the infantile type and had become fixed in the position of deep inspiration while he was still very young.

In various places on the skin there are capillary nevi which show dilated capillaries radiating from a prominent center and making round reddened areas from 5 mm. to 3 cm. (1/5 to 1 1/5 inch) in diameter, on the chest, right shoulder, left arm and back of left ear. The left pupil is larger than the right, both reacting properly to light and distance. The retinas show nothing abnormal.

On examination of the heart it is seen that the precordial area bulges perceptibly; no cardiac movements are visible, and no thrill is palpable. On percussion and *x*-ray examination there is increased size of the heart to the right of the sternum in a moderate degree. The apex is rather acute than blunt, the left margin extending in the fifth interspace ¼ inch outside left nipple line. There is a systolic murmur heard with maximal intensity over the apex just inside left border of the

* Read before the San Francisco County Medical Society, Nov. 5 1912.

heart in the fourth and fifth interspaces and transmitted into the axillae and also toward the sternum, diminishing in intensity to a point 2½ inches to the right of the apex. A systolic murmur is heard in the second left interspace close to the sternum, and is also heard in the first space with equal intensity at the right and left of the sternum. This murmur can be followed down the left border of the sternum to the tricuspid area.

Diagnosis.—While the physical signs of congenital heart lesions are notoriously erratic, one would appear to be justified in this case in making the diagnosis of open interventricular septum for the following reasons: In the first place the

Fig. 1.—Emphysematous chest occurring in patient with congenital heart disease.

classical signs of congenital heart disease are present. The patient was a blue baby; he still retains some cyanosis; there is pronounced clubbing of the fingers (Fig. 2), and the heart is more enlarged than would be expected from the mitral valve lesion present. There is a murmur heard over the heart particularly at the base, as well as one at the apex which is presumed to be due to mitral valvulitis. In addition to these the peculiar type of chest, the varicose ulcers of the legs, the enlarged veins on the chest and the stellate nevi indicate circulatory interference.

The most characteristic signs of a persistent ductus arteriosus are a thrill with a loud systolic murmur of greatest intensity at the base of the heart not associated with hypertrophy of either ventricle. There may be also a murmur running into or through the diastole. The case does not fit here, as in this patient there is absence of thrill and there is enlargement of the heart. Nor does he seem to have pulmonary stenosis, which would be likely to be manifested by a systolic thrill and murmur at the base with a diminished second pulmonary sound or a diastolic murmur. By exclusion, then, the question of open foramen ovale or interventricular septum remains. Quoting Cabot, "patency of the foramen ovale, if unassociated with other defects, does not usually produce any murmur or other signs by which it can be recognized during life and causes no symptoms of any kind."

It is not to be denied, however, that under certain conditions there may be a systolic murmur in open foramen ovale; particularly might this be true with a mitral valve leak. A distinction should be made between the terms "open" and "patent." If the pressure during auricular systole differs sufficiently in the two auricles a presystolic murmur may be expected as in a case (without post-mortem) described by Babcock in which there was a loud, distinct, systolic bruit in the third left interspace close to the septum with a very short presystolic portion. In favor of the view that this patient has a defect in the ventricular septum, it may be remembered that a loud systolic murmur is usually produced by the rush of blood through an opening between the ventricles and is heard as a rule over the whole precordium. Its greatest intensity differs in different instances, but it is usually over the body of the heart, not at the apex. Hypertrophy of both ventricles may or may not be present. The most important diagnostic point is the absence of a palpable thrill. These signs are present in this patient. Moreover, patency of the interventricular septum, according to Carpenter, who has written extensively on this subject, is the most frequent congenital defect, whether it is due to development or to inflammatory causes. It is frequently associated with other lesions, stenosis and atresia of the pulmonary artery, transposition of the great vessels and occlusion of the

Fig. 2.—Chronic osteoarthropathy in this patient due to cardiac defect.

tricuspid orifice. The combination of pulmonary stenosis, deviation of the aortic to the right and patent septum ventriculorum is one of the most usual combinations. It is not possible to say that there is not also in this patient an open foramen ovale.

In conclusion a word may be said regarding prognosis. Most patients with congenital heart disease, of course, die young and it is rather infrequent that such conditions are observed in adult life. Some degree of deficiency is not incompatible either with life or with hard muscular work.

A negro reported by Worcester, quoted by Babcock, dying at the age of 57 of general paralysis, showed post mortem a patent foramen ovale with a small interventricular defect. He had served through the Civil War. The patient, the subject of this paper, has been able to walk from 4 to 8 miles after his day's work was over without any inconvenience.

209 Post Street.

REPORT OF A CASE OF BRAIN TUMOR

E. E. MORRISON, M.D.
GREAT BEND, KAN.

Patient.—Woman; aged 59; had never had a severe illness of any kind; family history good excepting that mother died of carcinoma of breast.

Clinical Course.—Somnolence: About May, 1911, it was observed by her family that frequently, while seated in a chair and conversing with those about her, she went to sleep. When aroused she resumed her conversation and carried it on in her usual manner, often going to sleep again. Throughout the course of the disease drowsiness of varying degree and irregular sleep was noticeable.

Fig. 1.—Front view of cerebellum. The tumor is to the left of the center of the illustration.

Headache: Some time during May, 1911, headaches of considerable severity appeared in the occipital region and extended to the top of the head in a diminished degree. These headaches were a prominent feature of the case until the end. During the months of September and October, 1911, they improved. In the following November they again became severe. They varied in intensity, but remained constant.

Vomiting: Two or three weeks after somnolence was first observed and at about the time the headaches appeared, vomiting began. This was preceded by nausea and required some effort. It occurred daily and was frequently repeated many times during the course of the day. The material ejected from the stomach was food in various stages of digestion and after prolonged emesis consisted of bile. This symptom continued without much variation until some time in August, 1911, when it began to improve. During September and October it was very much improved, but never disappeared. In November it became more severe and assumed the projective type. From this time until the end it was more or less troublesome all the time.

Defective Vision: A short time after the initial symptom, patient complained that she could not see so well as usual. She could not read through her glasses, which had been satisfactory until that time. Her distant vision was likewise disturbed. This symptom improved at the same time that the headache and vomiting improved. It returned at about the same time they did and became progressively worse, until patient was unable to distinguish persons or teams as they passed on the road about 100 yards away.

Vertigo: A moderate degree of vertigo occurred near the beginning and persisted to the end.

Hebetude: Patient, normally bright and intelligent, early developed an indifference to her surroundings and became mentally sluggish and dull. When addressed, it was some time before she replied. In her conversation she failed to hold to and follow out an idea. Her process of thought was slow and interrupted.

Delusions: In July, 1911, patient asked why changes had been made in the plumbing in one of the rooms of her home. There never had been any plumbing in this particular room. She insisted that there had always been water-pipes in the room and that they had recently been changed. At the same time she talked of changes that had been made in the lighting system of her home. The system had never been disturbed. In January she had delusions concerning the visit of an absent son.

Hallucinations: In July, 1911, she talked of hearing workmen about the house. There had been no sounds that could have been misinterpreted. In January, 1912, she spoke of hearing the voice of an absent son.

Paresthesia: From Sept. 1, 1911, to the middle of the following October patient complained of burning and tingling sensations of the feet.

Paralysis: In December, 1911, the left lower limb became partially paralyzed. Patient, when assisted to walk, dragged the member along on the floor after the manner of a hemiplegiac. Good use of the right hand was lost in September, 1911.

Ataxia: At about the same time that paralysis occurred in the left lower limb, ataxia developed in the right. In walking, patient threw foot out sidewise or too far ahead, seeming to have neither control over its direction nor idea as to where it would come in contact with the floor.

Disorientation: This symptom appeared in January, 1912. Patient was unable to locate pieces of furniture about the room, and was unable to decide whether they were near or far. When led to a chair, she never knew when she was near enough to sit down. At about the same time she became confused as to time and did not remember whether it was morning or evening, whether an event occurred yesterday or a week ago.

Physical Examination: In the early part of July, 1911, physical examination revealed moderate emaciation; normal heart and lungs, normal area of liver dulness; normal position of kidneys; normal position and size of stomach; neither epigastric nor abdominal distention nor tenderness; no disorder of uterus or appendages; no areas of anesthesia, hyperesthesia or paresthesia; pupillary reflex sluggish; pectoral, abdominal, patellar and plantar reflexes normal; elbow and Achilles jerks normal. All of the cranial nerves, excepting the second and third, were properly performing their functions. Stomach contents were normal; urine was normal. Blood-examination revealed a slight reduction of hemoglobin. The ophthalmoscope revealed a choked disk.

Dr. Ethel Page Westwood, who examined the eyes early in November, 1911, has kindly given me the following information: Perimetric examination of each eye revealed a contracted field. In the very center of the field, yellow was the only color distinguished. The other fields were reversed in order and contracted as well. The edges of the optic disk were blurred.

Ten days before death, patient passed into a semiconscious condition from which she roused with great difficulty and to which she immediately returned. The muscles of her neck

and arms became rigid. She lay with her face turned to the left. A few days before death she became unable to swallow. Rapid respiration and a rapid heart action developed. Death occurred Feb. 20, 1912, about ten months after the initial symptoms of the disease.

Autopsy.—Each hemisphere of the cerebrum was normal in appearance except that on each side of the longitudinal fissure from a point near the occipital lobe to a point on the paracentral lobule, there extended a thin seminodular tissue formation of a pearly white color, having the gross appearance of an endothelial formation. At the paracentral lobule, the dura was adherent to the foreign tissue.

In the right hemisphere of the cerebellum in its lower and anterior portion, behind the wall of the fourth ventricle, pressing on the pons, encroaching on the space normally occupied by the vermis and extending across the cerebellar notch nearly one-half inch, was a round, dark-colored tumor about the size of an English walnut, apparently encapsulated and having about the consistency of the normal brain.

For the following pathologic report I am under obligations to Dr. A. E. Hertzler:

On cross-section the tumor is light gray with many punctiform areas of a darker color. These are spheroidal, for the most part ill-defined from the gray part surrounding. In

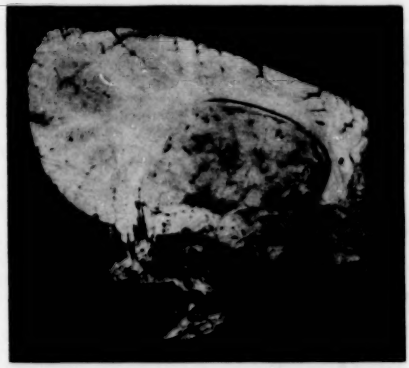


Fig. 2.—Lateral view. Section through middle of tumor.

some of these darker areas lumina can be made out, and about their border the deeper color is suffused. At the deeper part of the tumor the transition from the structure just described into the substance of the cerebellum is gradual and a line of demarcation can nowhere be made out.

Microscopic sections show a cellular structure abundantly punctuated with blood-vessels. The vessels contain distinct walls except in some of the smaller areas where vessel walls and cell masses are indistinctly separated. The cellular area is made up in some areas of large cells with large ovoid reticulated nuclei with rather an abundant protoplasm. In some areas small cells with round nuclei which occupy nearly the entire cell predominate. In the deeper portion these small cells form a prominent portion of the tumor, while in the free part of the tumor the large cells make up the bulk of the tumor. These large cells are in close association with the vessel walls and in some regions cannot be distinguished from their walls. In the surface of the tumor some of the large cells are distinctly elongated.

Malignant tumors of the brain have not yet been classified in a manner satisfactory to all pathologists. There is a disposition to place all malignant connective tissue tumors of the brain under the head of malignant gliomas. The problem is as involved here as the problem in tumors of the uterus. The small cells here are obviously the glia cells and correspond to the myoma cells in the uterine tumors, and it is a matter of election, so far as present knowledge goes, if we call malignant tumors resulting, malignant gliomas, gliosarcomas or simply sarcomas. This view assumes that the larger cells represent a metamorphosed small cell, a matter not beyond controversy. Their possible origin from the blood-vessel or from cells derived from the blood-stream cannot be excluded with certainty. The partial encapsulation suggests a vascular origin as a matter of fact. This relation of the tumor to the surrounding tissue would seem to speak against a glial origin of the tumor, inasmuch as gliomas are above all tumors the most exquisitely infiltrating. It is well known, however, that when gliomas undergo rapid development a pseudo-encapsulation is produced. This apparently is what has taken place here. When all these factors are taken into consideration, this tumor aligns itself most readily with the gliosarcomas according to Oppenheim's classification, though perhaps a more accurate designation would be malignant glioma as suggested by a number of recent writers.

LARGE URETHRAL CARUNCLE IN A GIRL OF NINE YEARS

A PRELIMINARY NOTE, WITH A SUMMARY OF THE SUBJECT*

COLEMAN G. BUFORD, M.D.
CHICAGO

Patient.—Bertha K., aged 9, admitted to the Children's Memorial Hospital, May 31, 1911. Previous history unimportant; fell down stairs in the spring (1910) while on roller-skates. Two days later the mother discovered that there had been bleeding from about the vulva and, on examination, found a mass about the size of the end of her thumb protruding from the labia in the region of urethra. When the patient was admitted to the hospital the size of the growth had not been reduced, although it had been treated by a number of physicians. No operative treatment had thus far been undertaken. A purulent discharge was always present. There was no itching and no discomfort on urination.

Local Examination.—A tumor was seen at the external meatus, extending about a quarter of an inch upward into the urethra. Its base was spread over almost the entire circumference of the urethral canal and meatus and was thrown into a vertical fold as it protruded. When the labia minora lay in their normal relationship, they compressed the tumor laterally. The tumor surface was not eroded; an 18 French sound passed easily. There was no foreign body in the bladder; no pus could be expressed from the Skene or Bartholinian glands; hymen was intact; there was no vaginal discharge. A purulent discharge from the urethra kept the parts about the tumor moist. Vaginal smears contained no gram-negative intracellular diplococci, but they were found later.

Operation.—The tumor was excised well outside of its borders and the surrounding skin drawn into the meatus with horsehair sutures, uniting it to the urethral borders. Primary union took place. Microscopic examination of specimen showed chronic granuloma. There was no recurrence of the caruncle up to November, 1912, when examination showed the meatus relatively smooth with no contractures. Gonococci were still present in vaginal smear.

Dr. Clarence Webster, of the consulting staff, saw the patient with me and suggested that, while urethral caruncle was not at all uncommon in girls, one of so large

*From the Children's Memorial Hospital, Surgical Department.

a size was unusual and that I ought to photograph the lesion and publish a report of the case. In reflecting over my rather limited experience with this affection and the circumstances under which these few patients had come under my care, it occurred to me that really the true nature of the trouble must frequently be overlooked and painful and harmful treatments often applied, and that many of these patients did not reach the channels for proper treatment.

On looking over the current literature, I find that this subject is far less commonly discussed than its frequency and the suffering that it causes would seem to justify. I do not wish it to be understood, however, that urethral caruncle has not been both early and thoroughly discussed in the literature. The earliest writers were Samuel Sharp in 1750 and Morgagni later in the same year. J. Y. Simpson dealt with the subject at some length in 1863, and Newberger in 1894 threw new light on it; but perhaps the most recent and thoroughly classical paper was published by M. Lange in 1902. Williamson and Alter[1] give a complete bibliography to date and a thorough review of the literature.

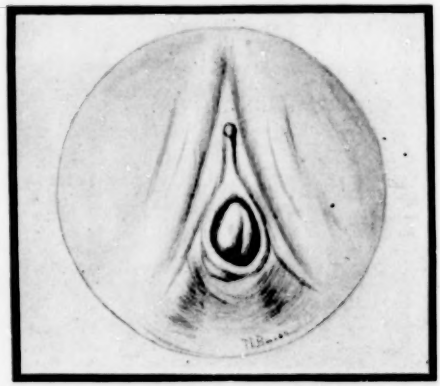


Fig. 1.—Urethral caruncle before operation.

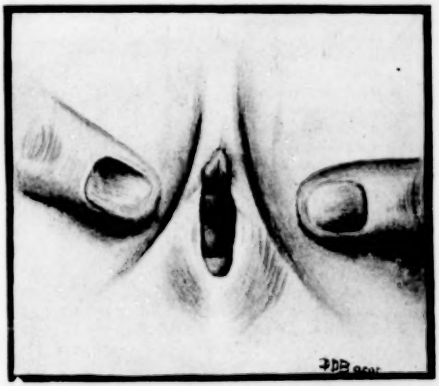


Fig. 2.—Site of urethral caruncle, about one year after operation. The slight elevations on anterior border of urethra resemble the former tumor. They are not a recurrence.

Urethral caruncles are growths covered by epithelium, unless eroded, appearing at the external urinary meatus of women and girls. Their size varies from a pin-head elevation to many times that size. I should say that the average caruncle is in volume less than the size of a half-pea. Some have small pedicles with relatively large bodies, while others are more flattened and have very broad bases. They are usually located on the lower half of the meatus and their bases often extend upward into the urethral canal. They usually vary from dark to light red in color and if pendulous are compressed laterally by the labia. Those with broad bases extending into the urethra are thrown into folds within it, usually taking the long axis. They are frequently seen in women, especially multiparae, less frequently in young girls, in whom they do not often attain large size. Some are painless, others associated with frequent but painless micturition, and others with varying degrees of painful urination. Howard Kelly quotes J. Y. Simpson's case, in which a married woman living in the country went far from the house so that her moaning and screaming on micturating might not be heard; others, more favorably situated, have been relieved only by the use of a catheter, while it was necessary to catheterize others under anesthesia over surprisingly long periods of time.

The etiology has been much discussed but remains unsettled and offers splendid opportunities for investigation. Neither neisserian infection nor the chemistry of the urine are probably universal etiologic factors. In 1894, Newberger studied twelve consecutive cases in which gonorrhea was endemic, a strong argument in favor of its gonorrheal origin. Retention of droplets of urine in the urethral canal or beneath long or closely folded labia minora and likewise the retention of normal or abnormal secretions between the labia or folds of the meatal mucosa should be given serious consideration, acting, as they do, as sources of constant irritation and thus inducing tissue changes.

The term "papillary polypus" was given to these growths by Simon in 1850. In 1855 Verneuil described their extreme vascularity. "Urethral hemorrhoid" was the term used by Richet in 1872 and also by Hutchinson in 1874. Virchow pointed out that in many instances they differed from telangiectasis in that the lumen was not dilated nor the walls thickened. Skene in 1889 recognized marked differences in structure and proposed to classify them into six different groups accordingly.

Of the recent articles that of Lange seems to be the most generally acceptable as to classification. Between 1898 and 1901 Lange examined 1,000 women and found fifty-eight caruncles of which thirty-nine were new growths and nineteen were granulomas. Williamson and Alter examined fifteen consecutive cases and found the following:

I. Granulomas, undoubtedly of inflammatory origin.
II. Innocent new growths of much more doubtful origin and varying histologic characteristics.
a. Epithelial covering.

1. Williamson and Alter: Jour. Obst. and Gynec. Brit. Empire, November, 1904, p. 365.

b. Basis of connective tissue in which were embedded
1. Glands having the characteristics of periurethral glands and
2. Large and numerous vascular spaces.

J. Y. Simpson's report of Dr. John Reed's finding of a rich distribution of nerve filaments in a painful caruncle has not been verified by other observers.

It is apparent that a fairly definite classification of the histopathology of caruncles is now established and it should be emphasized that not all caruncles will belong to the same class when submitted to microscopic examination.

The results of annoyances from caruncles deserve much consideration. Loss of sleep from frequent urination, urethral tenesmus and multiple vague pains may destroy the health of an otherwise healthy woman "and in her desperation she submits to anything offering relief." The condition is usually mistaken for urethritis or cystitis. I have had one patient referred to me who had been operated on for urethral fissure, one with a diagnosis of epithelioma of the meatus, and a third with a laboratory diagnosis of small-celled sarcoma, the slide being sent in with the patient. All the growths were quite small caruncles.

Treatment is not that of irrigation of the bladder, dilatation of the urethra, or use of caustics. Temporary remissions come not from these treatments but in spite of them. Complete excision well outside and under the tumor should be performed and the wound closed so as to leave the least possible cicatrix and a wide external meatus, thus providing against stricture. When the distal portion of the urethra is excised in a circular way it should not be allowed to retract; the skin of the vestibule should be drawn in and united to the urethra by horsehair sutures. When caruncles are not completely removed they recur. Instances are recorded of primary carcinoma occurring in the urethra or periurethral glands from which caruncles had been excised.

122 South Michigan Avenue.

EARLY DIAGNOSIS OF CANCER OF THE ESOPHAGUS

A NEW TECHNIC OF X-RAY EXAMINATION

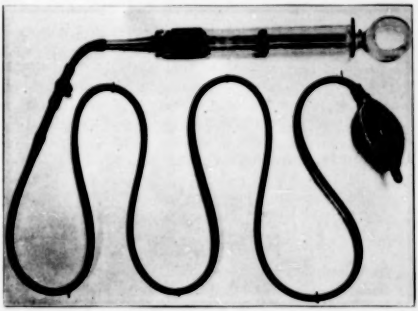
ANTHONY BASSLER, M.D.

Professor of Clinical Medicine, New York Polyclinic Medical School and Hospital; Visiting Physician, New York Polyclinic Hospital; Chief Gastro-Enterologist, German Poliklinik; Visiting Gastro-Enterologist, People's Hospital

NEW YORK

It is with the hope of adding something of practical value to the diagnosis of early cancer of the gullet that I have instituted the practice of a new form of radiographic examination of it. My object was to hold the bismuth in the esophagus so that a sharper outline of it could be obtained, such as is observed when plates of the stomach are made in which the pylorus shuts on the stomach contents, allowing the bismuth to distribute itself through the entire organ, thus outlining the curvatures sharply. Since in the normal individual as well as in those who have only a small degree of cancer formation, fluids reach the cardiac end of the gullet in from five to ten seconds, and solids in about twice that length of time, it seemed to me important to plug in some way the lower end of the tube so that the bismuth introduced could fill the gullet and give a sharp outline of its walls, such for instance, as is produced when a cardiospasm is present or a stenosis which holds the bismuth above them.

For this purpose, after experimenting with several methods, I concluded to use a simple apparatus made by George Tiemann and Company, which may be described as follows: To a 120 cm. (4-foot) length of rubber tubing 4 mm. in diameter, is attached a rubber bag covered with a reinforcement of silk, and having a brass tip at its lower end to give it weight. At the upper end of the tube is a cock. An ordinary surgical syringe of about 60 c.c. (2-ounce) capacity containing water is used to distend the bag, which, when distended, is fusiform in shape and measures about 10 cm. in its circumference. The tube is lubricated with glycerin and passed in the usual manner of a stomach-tube, or a mandrin may be employed to assist in its introduction. It is allowed to go down to beyond a mark made on the tube about 40 cm. (15¾ inches) from the upper end of the bag. The bag is then in the stomach, after which it is filled with water by means of the syringe. When this is done, the cock is closed and the tube is pulled on so that the bag is drawn tightly into the funnel-shaped



Bassler's cardia plugger.

cardiac orifice of the stomach. The patient is now told to exhale completely so as to raise the dome of the diaphragm to a high level, and the external tube is held tightly at this point. It is then fastened about the forehead of the patient, a double knot being employed to hold it, or in some instances it may be fastened around the neck. This is decided according to whether the patients have an opening in the teeth line, because it is desirable to have the tube rest on the gum rather than over the sharp edges of the teeth. In most instances, for comfort and quick work, an external weight may be employed to hold the bag tightly against the cardia (this is now my preference). Any weight of from one-half to one pound answers for the purpose. There is no danger of the tube breaking because there is a silk string inside the tube to keep it from stretching too far. At the same time, the length of the string within the tube is such as to permit the first 40 cm. to stretch 2 inches, this being made so as to allow for the excursion of the diaphragm in ordinary respiration which is about 2 inches at this part of it. When this has been accomplished, a mixture of bismuth, acacia and water is run into the gullet from an irrigating jar by means of an ordinary urethral catheter, preference being given to one

of large size in order to have a stiffness for ready introduction.

A study of a number of cardiospasm plates wherein there is only a slight degree of dilatation of the esophagus shows that the diameter of the gullet throughout its entire course runs about 3 cm., and the length of the normal gullet is about 23 cm. This capacity may be taken as a high standard for size, and represents about 160 c.c. It is wise to fill the gullet for an examination. Therefore 150 c.c. of suspension are placed in the irrigating jar and allowed to flow in until the bismuth mixture appears in the mouth, when one knows that the gullet is filled. With the patient standing, radiographs are then taken in the lateral dorsal position with the left back to the plate. These plates may be stereoscoped. Such plates then show the outline of the gullet and its normal narrowings as well as any changes present.

It is evident that by this method of examination irregularities of the walls of the gullet can be observed, and also it is rendered possible to make a diagnosis of carcinoma of the gullet long before stenosis appears. After the plates are taken, the tube is untied or the weight taken off and the relaxation of tension permits the bismuth mixture to flow into the stomach. The cock is then opened and the water siphons out of the bag, particularly when it is drawn into the gullet a little to encourage its collapse. Following this, fluoroscopic observations or plates of the stomach may be made. The regular employment of this method of examining the esophagus in *x*-ray examination of the alimentary tract is recommended as a routine. When stenosis is present it is not practical and is unnecessary for diagnosis.

126 East Sixtieth Street.

SIMPLIFIED TRANSFUSION *

SAXTON POPE, M.D.
SAN FRANCISCO

The transfusion of blood is of undoubted benefit in several diseases, and in surgery it holds a well-established position, with an increasing field of utility. But the technical difficulties of this rather delicate operation interfere with its more frequent employment. The usual methods, those of the Carrel suture and the Crile and Elsberg cannulas, require considerable experience, and the first attempts of the surgeon are often unsuccessful.

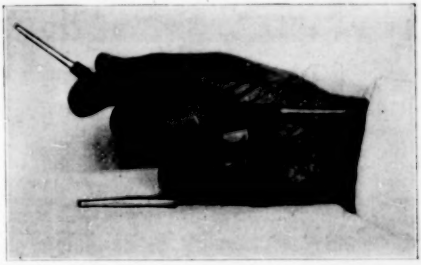
The Brewer tube is much simpler and apparently serves quite as well as the first-named methods. Even with this, as with the cannula and suture, the difficulty lies in the fact that the limbs of the donor and recipient maintain a position which interferes materially with the surgeon's work, and at the critical moment any slight movement may disturb the anastomosis or prevent a perfect transfusion.

To obviate this, for some time past in the research laboratory, we have used a rubber tube with small glass tips as a connecting medium. The interior of this tube is coated with a mixture of petrolatum and paraffin.

Such a method, of course, is not new. Guerin in 1875 used rubber tubing to perform transfusion and earlier experimenters used similar appliances. But since Carrel has shown that glass tubes coated with paraffin may remain in the aorta for months, and that similarly treated rubber tubing may be used to replace resected portions of an artery, without the production of thrombosis, the failure of earlier methods of this character may be overcome.

Our cannula is made of a piece of rubber catheter. The tips are easily drawn from glass tubing, over a Bunsen flame, and may be of various calibers. They should be slightly flared at the point and smooth at each end. The connected tube and tips should be boiled in equal parts of white petrolatum and paraffin. Great caution should be observed that this coating be evenly distributed, and that no bare surfaces occur in the cannula. The usual technic of transfusion may then be followed.

Under surgical asepsis, and novocain anesthesia, about an inch of radial artery of the donor is exposed, its lateral branches ligated, cleaned of adventitia, smeared with sterile petrolatum and ligated below. A clamp is gently applied above, and the vessel cut diagonally upward, half across. A mosquito hemostat is attached to the triangular bit of artery thus formed. This renders the introduction of the cannula easy. It may now be introduced and a ligature put about it. A short section of median basilic or median cephalic vein of the recipient is then exposed, cleaned, coated with petrolatum,



Author's cannula for blood transfusion.

ligated below, clamped above and cut as was the artery. The arms of donor and recipient are laid side by side and the arterial clamp released sufficiently to allow the tube to fill with blood. The free tip of the cannula is then introduced into the vein, and ligated in position. The clamp is removed from the vein, then from the artery and the transfusion started. During the active transference of blood, the tube can be seen and felt to pulsate vigorously.

Usually in ten or fifteen minutes sufficient blood is transfused for all purposes. Much depends, however, on the relative size of the two subjects, the needs of one and the strength of the other. Hemoglobin tests should be made, but clinical judgment is at present our best guide. In our work on dogs, reciprocal transfusion has been maintained by this tube for periods over half an hour, with no evidence of clotting. In the human being, after fifteen minutes of active transfusion, spurting still occurred from the cannula when disconnected from the vein. Should thrombosis supervene, as it may in any method with imperfect technic, it would be highly injudicious to attempt to dislodge the clot without first disconnecting the cannula.

With this advice, a blood transfusion is hardly more difficult than any intravenous injection.

* From the Research Laboratory of the Medical Department of the University of California.

TWO NEW CIRCULAR BONE-SAWS

FRED. C. ZAPFFE, M.D.
CHICAGO

These two saws are exceedingly useful in bone-cutting work. One (Fig. 1) was designed by me for the purpose of removing the transplant from the crest of the tibia in accordance with the technic of Dr. J. B. Murphy. It is a circular cross-cut saw, 1 inch in diameter and one-sixteenth inch thick, with a shank about 4 inches in length adapted to the Neff Victor motor handle (Fig. 2). The guard (Fig. 2, A), which is attached to the handle, carries at right angles to it a short movable rod (Fig. 2, B), which is adjustable (1) so that the size of the transplant can be regulated, (2) to steady the saw and prevent it from injuring the soft tissues, and (3) to keep it in a straight line. It cuts the bone rapidly, saving time and energy. The diameter and thickness of the saw depend on the character of the work to be done.

FIG. 1

FIG. 3

FIG. 2

FIG. 4

FIG. 5

Fig. 1.—Face view of ordinary bone-saw. This and the saw shown in Figure 3 are slightly smaller than the ones now in use, but may be made of any size. They are attached to the shank by means of the screws.

Fig. 2.—Bone-saw set up in electric Victor drill handle, with guard (A, B, C) attached.

Fig. 3.—Face view of skull or osteal flap saw.

Fig. 4.—The dura guard. By reference to Figure 3, it is seen that the saw is just over the groove in the outrigger A, which is placed into the trephine hole and pushes the dura away from the bone as the saw advances.

Fig. 5.—The osteal flap saw set up in electric motor-drill handle with dura guard in place.

The second saw (Fig. 3) is used for removing the bone flap in skull work. It differs from the first saw described in that it has heavy overhanging cutting edges and it is not cross-cut. The side cutting edges permit of making a bone flap 1 inch in diameter, much smaller than is necessary in most cases.

The dura guard (Fig. 4, A) which is used with this saw absolutely fulfils all the requirements. A trephine opening is made in the skull, and then the dura guard is slipped into it. It pushes the dura away from the skull and protects it from injury by the saw. A bone flap of any size can be made with this saw in less than a minute. It makes a clean cut 3/16 of an inch wide. The width of the saw may be increased or diminished, thus regulating the width of the cut. These saws and guards are not expensive; they are simple in construction and easily handled. They can be driven by electric, foot or hand power.

I am indebted to Sharp and Smith for their assistance in working out these instruments.

32 North State Street.

RETROCECAL APPENDICITIS

JABEZ N. JACKSON, A.M., M.D.
KANSAS CITY, MO.

In the voluminous literature on appendicitis one finds but little particular attention paid to the peculiar characteristics and sequences of inflammation of this organ when of the retrocecal or retroperitoneal type in anatomic location. And yet anatomic observations have shown that in about 20 per cent. of all subjects this position of the appendix is found. I have had a rather large proportion of cases of retrocecal appendicitis, and have been impressed with certain features which affect the diagnosis, prognosis and treatment to such an extent that it has seemed worthy of more attention than has usually been accorded.

In the more normal anatomic type the appendix from the base of the cecum passes more or less downward or downward and inward, and becomes an organ more or less associated with the large peritoneal fossae. In consequence, when it becomes the seat of an acute inflammation we have associated a greater or less degree of diffuse peritonitis involving both the contiguous viscera of the greater cavity and the anterior parietes. And it is this associated peritonitis which is responsible for those most marked symptoms which make its picture characteristic and its diagnosis relatively easy. We to-day recognize the fact that in the earlier stages of appendicitis the symptoms are largely referred to the epigastrium or stomach, and are represented by clinical signs, epigastric pain and vomiting. When the infection has progressed further and reaches the peritoneal envelope these epigastric symptoms largely give way, and in their stead the local pain, tenderness and rectus rigidity resultant from peritoneal irritation or inflammation manifest themselves and become the final diagnostic signs. These signs vary in rather important ratio with the extent of peritoneum involved; hence it is that, after all, our index to ordinary diagnosis is the attendant peritonitis rather than the appendicitis itself. Particularly is this true of the peritonitis which involves the parietal wall, for from this source we recognize to-day the principal symptoms, local pain and rigidity, arise.

In the retrocecal type of appendix, the anatomic relation of the appendix to the general peritoneum is quite different, and in consequence the sequelae of infection are in a measure quite distinctive. The term "retrocecal appendix" refers in general to that type of appendix which from its origin at the base of the cecum runs more or less directly upward or slightly outward and upward and is placed either directly behind the cecum and ascending colon or at least under cover of their overlap on the outer side. I have found indeed four

rather separate anatomic subvarieties of the general postcecal type:

1. The appendix, possessing its usual mesentery, is distinctive only in the fact that it runs upward along the outer side of the colon, which overhangs and confines it in the limited peritoneal space external to the colon (Fig. 1).

2. In another type the appendix runs upward external to the colon under cover of the peritoneum of the posterior parietes, which forms its investment usually incomplete on its posterior circumference, and even though complete not furnishing a mesentery proper (Fig. 2).

3. Again we have found the appendix running up along the external wall of the colon itself and invested by its proper tunic and likewise without mesentery (Fig. 3).

4. In the fourth type the appendix runs upward directly behind the colon, beneath which it is buried in

Fig. 1.—Type 1 of retrocecal appendix with mesentery.

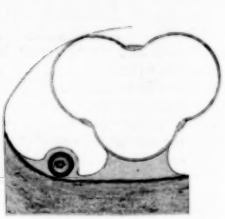


Fig. 2.—Type 2 of retrocecal appendix beneath, but only partly invested by parietal peritoneum.

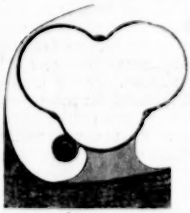


Fig. 3.—Type 3 of retrocecal appendix running alongside of colon and invested in part by the peritoneum of the colon itself.

Fig. 4.—Type 4 of retrocecal appendix entirely behind the colon with no peritoneal envelope.

connective tissue entirely and has no direct peritoneal investment whatsoever (Fig. 4)

In the first of these varieties therefore we have an intraperitoneal appendix with mesentery; in the second and third varieties we have rather a subperitoneal appendix; while in the fourth we have truly a retroperitoneal or extraperitoneal appendix. A recognition of these anatomic types of the retrocecal appendix will prove interesting in the observation of certain sequences of infection of the organ.

In the chronic or subacute varieties of appendicitis, the retrocecal type will present no particular significance, except that the tenderness incident thereto is situated rather far out, extends upward and backward toward the kidney and posterior under surface of the liver, often presents a particular spot of tenderness on pressure above the crest of ilium behind, and can thus frequently be anticipated prior to opening the abdomen. It is furthermore of interest in explaining the fact that so many patients are reported by amateur surgeons as lacking an appendix because they fail to recognize this type of appendix and do not know how to find it after they are in the abdomen. Its detection will require a good exposure of the extracolic fossa, and in the extraperitoneal variety the outer leaf of the mesocolon may have to be first incised and the colon partially lifted up from its bed. Unless of the first type, it will present no mesentery, when found, and will require enucleation instead of mesenteric ligation.

In the more acute infections certain other characteristics may be worthy of consideration. In the first place in nearly all cases the attendant peritonitis is quite restricted and is confined pretty accurately to the extracolic fossa. In fact, the appendix is so thoroughly overlapped by the colon that early adhesions often confine the peritonitis to a limited area close down at the base of the outer leaf of the mesocolon, practically entirely subcolonic. In some instances in which the infection is most obvious here, particularly when perforation occurs at this point, we may have a leakage and extension of peritonitis downward into the pelvis (Fig. 8) as well as backward and upward along the outer side of the colon. In fact, the presence of this lower pelvic infection may lead one to overlook the extension backward and upward and to content oneself with drainage of the pelvis alone, while a posterior infection is allowed to continue its course unrecognized, an error which led to several fatalities in my early experience.

Fig. 5.—Course of the more usual type of retrocecal appendix with routes of peritoneal extension obvious by exaggerated anatomic arrangement.

While I have stated that the peritonitis is here restricted, I should modify this statement as intended only in so far as the involvement of the general peritoneal cavity is concerned. As a matter of prime importance we must recognize that in this restricted area outside of the colon a very important, possibly extensive and dangerous extension of peritoneal infection may be going on often unappreciated and unrecognized because of its somewhat hidden site. This is the upward extension of peritonitis along the outer side of the colon into the loin and onward toward the under surface of the liver (Fig. 5). Reaching here it may follow around, now forward above the hepatic flexure of the colon beneath the liver, and result in a subhepatic abscess (Fig. 8) or may further invade more or less extensively the upper peritoneal cavity beneath the liver. More usually, following gravity it reaches the low fossa behind the liver, passes upward between the liver and diaphragm, and results in a subphrenic peritonitis, often terminating in an obscure subphrenic abscess. From here the infection

may pass through the diaphragm into the pleural cavity with resultant empyema; or in the event of lung adhesions may break into the lung itself and produce a lung abscess, or rupture into a bronchus and thus be evacuated with a possible septic bronchitis added. In fact, in one of my cases death ensued rapidly from rupture of such an abscess into a bronchus, coughed up and inspired, with virtual drowning of the unfortunate child. Surely with these possibilities of lumbar abscess, pulmonary abscess, subhepatic abscess or peritonitis, subphrenic abscess, empyema thoracis and septic bronchitis or pneumonia, Deaver was justified in the statement attributed to him that "the retrocecal appendicitis is a bad type of appendicitis."

But outside of peritonitis and its extension there are further factors of peculiar importance. In all save the first type of my classification it will be observed that the appendix is in some part at least extraperitoneal or retroperitoneal. Infection may therefore spread to the cellular and other retroperitoneal tissues as well as to the peritoneum. A cellulitis is therefore one of the further dangers and may occur with or without a coincident peritonitis. This cellulitis may become localized or diffuse, may extend by continuity of the retroperitoneal space or may be diffused through the subperitoneal lymphatics. Also, as a matter of distinctive significance, the infection in this retroperitoneal space may extend to involve the colonic blood-vessels, particularly the veins, and give rise to infective phlebitis with dissemination to different parts of the body, more particularly to the liver (Fig. 6).

Fig. 6.—Figure illustrating how, with a retrocecal abscess, thrombi may pass into the portal with secondary liver abscess.

By direct extension through the retroperitoneal connective tissue it is easy to imagine how extensive the infection may become, and should the patient survive the general sepsis sufficiently long, how varied may be the points of presentation of the ensuing abscess. In one of my cases the entire perinephritic space was involved to such an extent that on posterior incision for drainage the kidney almost floated out of the wound. Many cases of perinephritic abscess may thus be explained. In the case just mentioned, the posterior drainage instituted did not suffice to prevent death, and on autopsy it was found that the infection passing behind the peritoneum had crossed the spine to the opposite side (Fig. 7), where an equally extensive abscess had been left unrecognized. In another case the abscess had occurred in the psoas magnus muscle, which had been largely destroyed with an abscess extending from the pelvic brim well up toward the diaphragm. In another case the infection spread through the parietal wall posteriorly and laterally and then followed down the thigh on its anterior and outer aspect to the knee. These few instances are sufficient to illustrate the multiform direction of extension as met in my limited experience, and might be almost indefinitely extended if recourse were made to general literature.

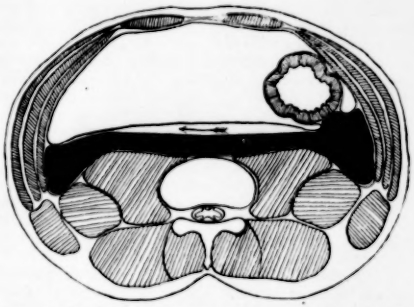


Fig. 7.—The black shading shows how pus may pass behind the peritoneum across the median line to the left lumbar fossa.

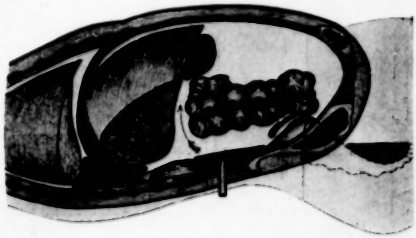


Fig. 8.—Shaded areas illustrate fossae of pus, the route of extension and the importance of the posterior drainage in recumbent patient.

The possibilities of extension by the portal radicals is also of importance. I have had the unfortunate privilege of making an autopsy in two of my own cases with multiple and surgically hopeless liver abscesses, resultant from a small retroperitoneal abscess (Fig. 6) unrecognized in time for any hope from surgical intervention.

This hasty and brief sketch limited to personal experience is sufficient, I think, to illustrate the importance of special study of the particular features of retrocecal appendicitis, which in my judgment more than any other type requires early diagnosis and prompt and in some respects special surgical attention.

SYMPTOMS

From what has been said about the special anatomic relations of the retrocecal appendix we are prepared to appreciate some of the peculiar features of symptomatology and the necessity often of very close study to arrive at a correct early diagnosis. In my judgment the difficulty of diagnosis, particularly in the hands of the general practitioner into whose care all cases first come, and the consequent failure to secure prompt or proper surgical care are responsible for the designation of Deaver, "the bad appendix." And it is particularly the absence of a diffuse peritonitis which leads to the failures of diagnosis, since, as I noted in my introduction, it is on the distinctive features of peritonitis, particularly of parietal peritonitis, that we have mainly relied for diagnosis. In retrocecal appendicitis these symptoms may all be largely lacking, or if present at the onset may quickly disappear. I have thus frequently had medical confrères remark, "We thought at the onset that we had a case of appendicitis, but the symptoms of this quickly disappeared and since we have been at a loss to know what was the trouble." This remark serves to illustrate the important significance of the early symptoms, and the general failure to appreciate the transition to those peculiar to the retrocecal type. I shall here refer only to the acute variety of appendicitis, as the subacute or chronic presents no clinical peculiarities other than before mentioned.

Epigastric Pain.—The primary epigastric pain is usually marked in this type as in others of acute appendicitis.

Vomiting.—Vomiting usually accompanies or follows the epigastric pain as in the ordinary case.

Local Pain and Tenderness.—In the usual intraperitoneal appendix case, the epigastric pain and vomiting are followed in a short time by a transfer of pain of acute type to the lower abdomen and perhaps to the region of the appendix in particular, this is attended by a marked tenderness, either local or diffuse, over the lower abdomen in general. This lower abdominal pain and tenderness is not only marked but persistent, unless sudden perforation supervenes. These symptoms are in large measure the indication of approaching or present more or less diffuse peritoneal involvement. And here the divergence in symptoms begins. In the retrocecal type there is usually some pain and tenderness in the region of the appendix. This pain, however, is not usually so severe, and the tenderness is much more circumscribed. Then as the causative peritonitis is usually quickly localized under and behind the outer side of the colon, with exceedingly slight or no involvement of the anterior parietal peritoneum, the pain becomes either markedly decreased or may practically disappear entirely. Likewise the tenderness hidden behind the cecum becomes diminished and may be entirely missing on palpation over the abdomen in front. Pressure from behind just above the crest of the ilium and in the loin almost invariably elicits, however, often unsuspected, even by the patient, tenderness more or less acute. And herein is presented one symptom elicited by proper examination which is very significant indeed when associated with the primary symptoms above noted, and which should be definitely borne in mind in this connection.

Abdominal Rigidity.—Abdominal or rectus rigidity, so significant in the intraperitoneal appendix, here is likewise usually of transitory presence. What rigidity remains after the first onset, is limited to the later abdominal muscles, and the rectus may become soft and negative.

Abdominal Distention.—More or less distinct abdominal distention marks the normal appendicitis because of the involvement in the peritonitis of the adjacent small intestines. In the retrocecal type, on the other hand, the peritonitis is restricted to the colon, and the small intestines are not involved. The accompanying distention may therefore be entirely lacking or, if present, moderate and soft.

Tumor.—In the general type of appendicitis, particularly when leakage occurs, we soon have a distinct tumor mass easily recognized through the anterior abdominal wall. The edema of the contiguous intestines will present an apparent tumor often even though there be little or no leakage or peritoneal exudate. With the retrocecal appendix whatever edema or leakage or exudate may be present is under cover of the overlying colon filled with gas, fluids and feces and often cannot be recognized at all. If found at all it will be well outward and backward, and often present only in the loin.

Temperature and Pulse.—The temperature elevation and pulse increase are of course present as in any infection. It is noteworthy that they persist even after the local signs apparently disappear. This persistent high temperature, after the subsidence of local signs has led many a case to be diagnosed as typhoid fever, tuberculosis, malaria or one of any variety of infections characterized by fever. As a matter of fact the temperature usually remains at from 101 to 103 F., is out of proportion to local signs, and the pulse is increased in corresponding septic ratio, too high for typhoid and such infections.

Blood Examinations.—The examination of the blood is particularly serviceable here. The negative Widal may be of service in excluding typhoid, and the leukocyte count shows usually an increase in the white cells characteristic of pus infection.

Sepsis.—The general picture of septic infection will persist and increase in spite of the apparent subsidence of recognized local signs of infection, and should point the way to the recognition of at least some focus of distinct infection, only necessitating proper local assignment. But after all is said the recognition of the local area of infection rests on (1) the primary symptoms, requiring close attention to the earliest history of the case; (2) the tenderness usually found posteriorly; (3) the blood examination and other signs of pus infection.

TREATMENT

In treatment, a few points of practical significance I have found worthy of special consideration based on my own experience. It is pretty generally conceded to-day that in any case of acute appendicitis early operative interference is the proper procedure. In the retrocecal appendicitis I believe this to be of particular importance, first because of the obscurities which arise with delay, and second because of the dangerous extensions which are so apt to occur without well-marked signs to indicate their menace. If one waits until infection has spread by the continuity of peritoneum to the subphrenic space, most difficult problems of localization and management will arise. A subphrenic abscess may be very hard to locate even when we are reasonably sure of its existence somewhere; and even though located, its access is difficult and limited in its hidden site. Possibly while we hesitate, carefully seeking the spot of infection, it is already making its way through the

diaphragm into the pleura, the lung or bronchus. I have faced such situations often with hesitation and uncertainty fatal to the patient.

Furthermore if we delay, in the retroperitoneal type we may permit embolic infection of the liver with multiple abscesses entirely beyond any hope of relief by surgical means or otherwise. We would therefore emphasize the need of early diagnosis and early removal of the appendix as particularly indicated in this anatomic type of appendix.

If operation can be instituted while the trouble is still confined to the appendix, there is little further to be said except that a rather larger incision is necessary to expose the appendix which probably has no mesentery, and often the incision should be rather further back than that employed for the more usual lower site.

After perforation has occurred with peritonitis and abscess some further factors are important. In opening the abdomen from anywhere in front, as customary, we will usually enter the free peritoneum, as the abscess will be hidden down beneath the colon by adhesions. It is then well to pack off well toward the median line to prevent any general infection when we later break through the adhesions into the abscess. To avoid this condition a posterior incision in the loin has been advocated, and may in some cases be advantageous. It gives little opportunity for observation, however, and makes it rather difficult to reach and deal with the stump of the appendix at the base of the cecum. If we have a rather large abscess and are content to incise and drain, it is a route to be preferred. When I expect, however, to remove the appendix at the time, as I practically always do, the anterior incision, extended backward if desired, has been my route of selection. In many cases the appendix will be found long, extending well up to the under surface of the liver, and the incision will have to be extended backward until fairly long in order to give sufficient exposure if removal of the appendix is desired.

One point I have found of great importance. It must be remembered that the space about the kidney and below the liver is at a distinctly lower level when the patient is lying down than is the iliac fossa where the base of the appendix is situated, and which is directly beneath the anterior incision. In drainage therefore if we merely put in drainage in front, as is customary in other types of appendix, we will leave a large fossa behind which may retain a considerable pool of pus (Fig. 8). This pool of pus is just at the danger-spot for the extensions which I have cited as particularly menacing in these cases. This fact was forced on my attention some years ago in a case in which I had operated. The drainage which had been put in front was apparently effective with a profuse amount of pus. And yet the patient remained unaccountably septic. After having carefully cleaned up the wound one morning, in attempting to turn the patient over to remove the Kelly pad, my hand was pushed forward from the lumbar fossa, when the clean wound immediately flooded at least a pint of pus and caused me thus to realize the inadequacy of the drainage from in front. Since this experience I always seek the lowest point of the lumbar fossa from in front, and from behind make a sufficiently large incision down to the bottom of this pouch to provide for a large drainage-tube nearly an inch in diameter. This tube is carried just far enough in to drain the bottom of this area well. Until I learned this one thing I had a mortality of at least 75 per cent. in my cases of retrocecal appendicitis, from insufficient drainage and infection which continued to spread. Since learning this lesson and invariably employing this posterior drainage the mortality has been nil, except in cases so far neglected as to have already secured the remote infections before any surgery was instituted. A cigarette drain is usually added in front as in the normal case. When the abscess is first encountered well below at the base, this extended infection behind may easily be overlooked, as has occurred in my experience once or twice, in each instance with death. The one surgical feature therefore for strict observation in retrocecal appendicular abscess is posterior lumbar drainage.

2614 Forest Avenue.

PROPHYLACTIC VACCINATION AGAINST EPIDEMIC MENINGITIS

J. H. BLACK, M.D.
DALLAS, TEXAS

With the desire to establish the value of prophylactic vaccination against epidemic cerebrospinal meningitis, experiments were undertaken by Dr. Abraham Sophian and myself during the month of April, 1912. This work was done on ten medical students who were in good health and volunteered for the work. These men were vaccinated with three doses at seven-day intervals. To half of them doses of 500 million, 1,000 million and 1,000 million were given. The other five received doses twice as large. Examinations of their blood were undertaken at once and showed an early development of agglutinins and immune bodies which increased after the second and third injections and, with considerable uniformity, reached a high degree. This work was reported in THE JOURNAL.[1]

The value of prophylactic vaccination must depend, not only on the agglutinins and immune bodies developed, but also on their persistence. If it can be shown that a considerable degree of immunity is found over a long period of time, then this is a procedure worthy of commendation.

Eleven months after the vaccinations were made I repeated the former experiments to determine what, if any, immunity could be demonstrated after the lapse of this length of time. Eight of the original ten vaccinated students were accessible. The technic used was identical with that reported in the former communication. In addition to the blood of a normal individual acting as a negative control, the blood of a student who had recovered from a severe case of meningitis just prior to the time of these vaccinations was used as a positive control. It will be noted that some of those vaccinated gave higher fixation than he.

It has been noted by many observers that agglutination tests on meningococci, as with other Gram-negative diplococci, often give very irregular results. Because of these irregular, and consequently unsatisfactory, results, the agglutination tests which were done at the time of vaccination were not repeated at this time.

It will be seen from the accompanying table that the complement-fixation tests still give uniformly high readings. It will be noted that in Cases 3 and 9 sharper fixation was obtained in the higher than in the lower dilutions. This was observed in the previous work and had been noted by Sophian and Neal[2] in their work on

1. Sophian, Abraham, and Black, J. H.: Prophylactic Vaccination Against Epidemic Meningitis, THE JOURNAL A. M. A., Aug. 17, 1912, p. 527.
2. Sophian and Neal: Research Laboratory, New York City. Collected Studies. 1912.

meningococcus strain differentiation. Another point of interest is that Cases 3, 9 and 10 show higher fixation at this time than they did at the conclusion of the former work.

While it is recognized that experimental vaccination of healthy individuals in the absence of an epidemic and the detection of immune bodies in their blood is an indirect way of proving its efficacy and that the method must finally be judged by its clinical application, we feel that we are justified in drawing the following conclusions from these studies:

1. Prophylactic vaccination produces a high degree of immunity in most cases, this immunity being demonstrable at the end of one year. It seems a justifiable conclusion that most individuals prophylactically vaccinated may safely consider themselves immune for at least one year. Exceptions to this will, of course, be found.

COMPLEMENT FIXATION

Case No.	Dilutions								Control
	10	20	30	50	100	150	200	250	
1	+++	+++	+++	+++	+++	±	—	—	—
2	+++	+++	++	+++	+++	+	—	—	—
3	+	+++	+++	++	+++	++	—	—	—
4	+++	+++	+++	++	+	—	—	—	—
5	+++	+++	++	++	±	++	—	—	—
8	+++	++	+++	+++	+++	++	—	—	—
9	+	+	++	++	+++	+	+	+	—
10	+++	+++	+	+++	+++	++	++	++	—
Pos. con.	+++	+++	++	+++	++	++	—	—	—
Neg. con.	—	—	—	—	—	—	—	—	—

2. Some individuals may show an actual increase in immune bodies at the end of one year over those demonstrable soon after vaccination.

3. Fixation occurred with the serum of the positive control who has recovered from meningitis but this fixation did not reach as high dilutions as did that of some of those vaccinated. This has previously been found also in some others recovered from the disease.

4. Experimental evidence warrants us in concluding that prophylactic vaccination is a measure of the greatest value in the control of epidemic meningitis.

MEDICAL ETHICS

BY A PHYSICIAN'S WIFE

Years ago my husband and I got into a little wagon, and hitched it to a star, and began our journey through the world for either failure or success. Somehow we never thought of failure, because I believed in him, and he, without any vanity or egotism, believed in himself.

After we had set up our Lares and Penates and begun our season of hoping and waiting, so trying to the young physician, I one day undertook to arrange his medical library. It was not large, of course, but well selected, and I remember some of the books. There were the immortal Gray's "Anatomy," well thumbed and well read; Gross and Agnew's "Surgery," J. M. DaCosta's "Physical Diagnosis," some of William Pepper's and other works of that period. They were the giants of those days. Over those tomes has grown the dust of years; the bell has rung, the school is out, the teachers have gone home never to come back — they are the men of yesterday.

When I came to the end of one of the shelves I found a small, cloth-covered book marked "A Code of Medical Ethics."* I had never heard of it. I sat down, in the midst of my work, and read it from cover to cover. Shall I ever forget the impression that it made on me? My whole idea of the medical profession had undergone a great change. It taught me that no commercialism could ever enter into its practice; barter and sale, trade and traffic had no place there; its nobility of purpose, its devotion to duty were paramount. Its all-pervading humanity made it divine, for it embodied the great commandment, "Thou shalt love thy neighbor as thyself."

Then the years began with their work and purpose, and the wagon, hitched to the star, carried my husband into the teaching faculty of his alma mater. I was proud and happy, and thought that he had "arrived." No, he had only begun. It was like the pendulum of a clock, night and day, toil, toil, toil. Oh, these men of to-day, what are they doing? By the munificence of some men who have made great fortunes in other lines than medicine, the men of medical research are climbing mountains of difficulty, sometimes finding their El Dorados and sometimes finding mountains far beyond.

Still achieving, still pursuing
Learn to labor and to wait.

Men in the laboratories discovering hidden diseases unseen by the naked eye, the men who have perfected the use of the Roentgen rays, the men engaged in activities for public health and the successes of sanitation, by their genius and perseverance have blazoned the way toward the happiness of many and the betterment of all.

The teacher who enters the amphitheater comes with the enthusiasm of his calling, bringing to his task his experience, his observations and his hours of study, believing that the students before him are those who stand in the vestibule of time waiting to become the "men of to-morrow."

The writer, possibly after a day of nervous strain, takes up his pen while others are sleeping or feasting, and gives to a larger field his thoughts, his opinions, his ideals and experiences, for the enlightenment of others. Then the white-robed surgeon, who day by day steps into the arena with a cool brain, a trained eye, a firm hand, and dexterous fingers, a perfect knowledge of anatomy, and reliance on asepsis, meets the lurking foe and puts the great destroyer to flight. He who saves and not destroys is greater than he who takes a city. Then there are the physicians who are in the towns and villages and countrysides; their work can better be illustrated by a little story of Henry Van Dyke's:

REWARD OF SELF-SACRIFICE

Once on a time there was a man who amassed a great fortune and built a beautiful mansion. One night he went into his library, turned up the reading-lamp, selected a book and sat down in a comfortable chair to read. Suddenly the letters seemed to fade, and he found himself on a great highway where people were all walking in the same direction. Joining one of the groups he recognized among them the village doctor of his early home, and a wave of fond recollection came over him. The years dropped away and he was a boy again.

How beloved the doctor had been! He remembered the time when his mother had been so ill and they had leaned so on this man. How thoughtful and kind and compassionate he had been! And when she was restored

*EDITOR'S NOTE: "A Code of Medical Ethics" is the old title. The present title of the booklet is "Principles of Medical Ethics."

to health and sat again among them, how they had loved him! Sometimes in the winter nights, when snug in bed and the wind was blowing cold, he would hear the wheels of the doctor's old buggy drive over the frozen ground; and in the summer, when he came from the river after a cool bath, he would meet the doctor, covered with dust from a ride in the hot sun. Oh yes, he remembered it all.

Then he began to catch snatches of the conversation, and he found that all his companions had suffered troubles and trials and had practiced self-denial. Soon they came to the City Beautiful, and the guide, who met them at the gate, took them down the shining street where the many mansions are, and each entered into his own place. The guide, pointing to the most beautiful of all, told the doctor that this was his, and those who remained outside heard the happy and loving greeting which the doctor received as he entered.

At last they were all gone except the rich man and the guide, when the two had come to a field of stubble in the midst of which stood a wooden hut, the guide, pointing to the hut, said, "This is yours."

Aghast, the man cried, "Why is this?"

The guide replied, "This is all the material you sent here."

"What," said the man, "I gave money to hospitals."

"Yes."

"I gave money to charities."

"Yes, but those materials never reached here."

"Why not?" asked the man.

The guide sorrowfully replied, "There was no self-sacrifice in them — they cost you nothing." And with a groan of anguish the man awoke. It was a dream.

A TRIP ABROAD

A few years later, when our only child had finished a college course, it was decided that she and I should take a leisurely trip through Europe, leaving the professor to write his text-book. In our meanderings we reached Vienna one day and drove out to a cemetery where many illustrious dead were buried. In walking through one of the avenues I found the grave of Virchow, on which lay a large wreath of fresh flowers; on the ribbon attached I read the words, "To the Master from his affectionate students." My eyes filled with tears and a great wave of homesickness passed over me. These Germans may be scientific and phlegmatic, but they are full of sentiment, and I thought that in my own country such a thing would never be dreamed of, for no one has time to remember.

On entering the compartment of the train, the morning on which we left Vienna for Venice, we found a young man and woman as our companions, both Americans. He proved to be a graduate of one of our great universities, and in that long day we became quite friendly. He had graduated in medicine in June, and this was his wedding journey with his dear little wife. We talked a great deal about college, and one thing he told me impressed me very much. He said that one of the professors of that great institution had taken pains to give lectures on medical ethics, and I wondered if this was being done in the college which I was taught to believe great, and I determined to find out on the first opportunity.

Later, when in Rome, I stood under the Arch of Drusus, which commands the Appian Way, and as I stood there I had a vision. I did not see the great legions of Roman soldiers coming with their trophies and victories of war, but a small group of men; and as they drew nearer, one I observed was a little shorter than the others, and was in the company of a centurion. As they passed through the arch they stood inside the city. On the left side was the golden house of Nero, panoplied with all the pride of absolutism, shining and glittering in the soft sunlight. Before them was the Forum, with patrician senators in their togas, standing in groups, scheming and gesticulating—politicians, every one of them. To the right was the Basilica, from which the tones of the orator's voice could be heard. Nearby was the Colosseum, decked for a gala occasion. Not far off was a crowd of common people, pushing and shoving and grabbing tickets of admission to the Colosseum entertainment, the two upper tiers having been assigned to the public, free, on the presentation of these tickets; hence the great struggle to obtain something for nothing, as to-day.

Further along was the Palatine Hill crowned by the handsome palaces of the Caesars; below, the Circus Maximus where insane Caligula raced his horses and called them gods. There came a sound of marching feet, and a hundred Roman soldiers commanded by a centurion, passed by. And then, as I looked at the little group of men, I saw one with an illuminated countenance, a determined spirit, undaunted by the spectacle of power before him, and then my vision faded. I was a twentieth century woman standing under the old arch alone. Of the golden house of Nero not a vestige remained; the Forum was chaos; the Colosseum in ruins; the Palatine shorn of its palaces; the Circus Maximus a field of grass; the centurion and his soldiers had vanished with the centuries, and the small group of men to which I had been so much attracted had gone too. The great Roman Empire was a thing of the past. As I saw the dome of the great cathedral glistening in the soft sunlight, I thought that my hero of the Scriptures had given to the world a new empire which was established forever. And with this thought came those marvelous words of his: "Whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report, if there be any virtue or any praise, think on these things." Are not truth, honor, justice, purity, nobleness of purpose, graciousness of manner, devotion to duty, are they not lovely? Are not these the foundations, essentials, principles and ideals of ethics?

FRUITS OF THE MEETING ON THE TRAIN

One evening after our return from Europe the faculty of my husband's college dined with us, and it was my opportunity. I told the episode of the train to them, of the good professor of a great institution who taught medical ethics to the graduating class and asked if this were done in their college. They said no, only in a desultory way, as they had no room for that subject in the curriculum. I could not help expressing my regret. Judge of my surprise and delight when sometime later I was told that the next year these lectures would be arranged for and one of the professors would be appointed to teach.

There is no doubt but that young medical practitioners are often tempted, and in spite of their scientific knowledge, go wrong. The teacher who gives to the students the highest ideals of his profession may keep their eyes from tears, their feet from falling and their souls from death.

CAUSES OF THE MIGRATION OF THE OMENTUM

ARTHUR E. HERTZLER, M.D.
KANSAS CITY, MO.

The fact that the great omentum is commonly found attached to areas of inflammation in the abdomen when such areas exist has long been known to surgeons. What the compelling forces are that attract it to these foci has not been determined. The term "policeman of the abdomen" has been applied in several languages to the omentum, but what is meant by this has not been explained in any of them. Peristalsis is supposed to account for its actual movements, though there is no proof of this.

In the beginning of my studies, which were made through a glass window in the abdomen, the first thing noted was that in those conditions which are attended by the migration of the omentum the peristalsis is suppressed; and conversely in conditions (for instance, obstruction) attended by active peristalsis, there is no movement of the omentum. The explanation for this will appear later.

The constant factor observed in the migration of the omentum is that it moves only toward areas which are injured and only when the injury is attended by the formation of a fibrinous exudate and the accompanying cellular infiltration. Similar injuries not followed by fibrinous exudate and cell infiltration are not attended by movements of the omentum. This is a common observation of surgeons. If an exudate occurs into the walls of an appendix, the omentum will be found attached to it. If there is necrosis, there is no attachment of the omentum. There is no sharp dividing line between the cases of attachment and non-attachment because there is none in the degree of the ability of the tissue to react. Streptococci and to a degree the colon group are not attended by a fibrinous exudate or by an abundant cell infiltration (broadly speaking), and with such cases also leukopenia is associated. Such infections may be said to exercise no chemotaxis on the omentum. This lack of reaction can be demonstrated experimentally by means of disks of corn-pith placed in the peritoneal cavity. Ordinarily a sterilized pith excites an exudate of fibrin and cells and the omentum is attracted; but, if a bit of pith is first soaked in peptone solution, fibrinous exudate is not formed nor do cells surround it, and the omentum is quite indifferent to its presence.

When we search for microscopic differences in the two conditions we find that in one case there are numerous cells with a fibrinous exudate, and in the other there is neither fibrinous exudate nor cells. It has not been shown by experiment what reaction there may be between cells and fibrin, and especially which is the primary attractive element. For the present, therefore, it is best to treat them together.

As a preliminary statement of the forces leading to movements of the omentum, the following may be advanced: When an injury occurs, the series of processes collectively called inflammation is set in motion. Exudation of cells and formation of fibrin take place at the point of injury and also in adjacent parts of the omentum. These elements, though massed in the omentum, are attracted toward the focus of the inflammation as if they lay free in the abdominal cavity, and tend to carry the omentum along with themselves. Further than this one cannot go. It is a matter of observation that the omentum after it is attached to the inflammatory focus is always infiltrated more or less with fibrin and cells. But whether or not this infiltration occurs before it is attracted toward the site of injury or after it becomes attached is not to be solved by clinical observation alone.

In experiments with the corn-pith the omentum migrates before there is macroscopic evidence of infiltration. There is hyperemia, however, and likely some exudation of cells and fibrin-forming material. The influences which cause this hyperemia are probably the same as those which cause vascular dilatation about any inflammation, and, like them, are effectual beyond the sphere of visible cellular changes. Whatever these influences may be they are probably at least physicochemical in character, and seem to be dependent more on the fibrin formation than on the cell exudation. Under some conditions granular exudate may form which is not infiltrated by cells. It is probably more akin to a precipitate than a coagulate. The relation of omental movements to chemotaxis is emphasized by the fact that in those conditions in which there is a leukopenia or at least no leukocytosis there is no migration of the omentum. These facts will be so obvious to the surgeon that the mere mention of them is sufficient here.

To prove that the cells and fibrin-forming elements are adequate for omental movements apart from any properties inherent in the omentum itself, direct observation and microscopic study of tissue do not suffice. An artificial omentum which can be controlled is necessary for this demonstration, and for this purpose also disks of corn-pith serve very well. These when placed free in the peritoneal cavity migrate to the site of injury just as the omentum does and under the same conditions. Inherent factors cannot, therefore, be the essential ones in the movements of the omentum, and a real "police intelligence" cannot exist. The corn-pith moves only after the exudate with which it has become infiltrated coagulates into fibrin, a process associated more or less with the exudation of cells. I am strongly inclined to believe, however, that migration of the corn-pith begins with the formation of the fibrin, for in early stages few cells are present, although the fibrin is already formed and migration has taken place. Studies of the various cells as to origin, function and destiny are intricate, and no unquestioned analysis of them has been made.

My study of wound-healing has shown me that fibrin bands form first and that the cells follow along these. Burrows has made the same observation in studies *in vitro;* the fibrin always forms first. It appears, therefore, that the chemotactic influence as exerted on cells is associated with the fibrin. The granular fibrin, on the other hand, does not so invite the cells. Corn-pith treated so as to prevent the deposit of fibrin fibrils becomes the site of a collection of granular fibrin and of a few cells which appear to have drifted in rather than to have been positively attracted, since they lack the orderly arrangement of the cells associated with fibrillar fibrin. Furthermore, under these conditions, the omentum does not migrate toward the corn-pith.

The formation of fibrillar fibrin and the attraction of cells to it is allied closely to the coagulation of blood. Whatever prevents blood from coagulating prevents the preliminary step in all wound healing, including the formation of adhesions and the attraction of the omentum; that is, the formation of fibrillar fibrin. The sub-

stance that has the prominent part to play in the coagulation of blood is the *Kittsubstanz* of the blood-vessel endothelium. The same material of the peritoneal endothelium is the initial factor in the formation of adhesions. This substance strongly reduces silver nitrate and on this and other grounds I have tentatively assumed[1] that it is rich in chlorids, probably in combination with calcium. The point of interest in this connection is that the omentum is particularly rich in this *Kittsubstanz* and is therefore capable of producing an exudate when subject to irritation. Other peritoneal surfaces are less abundantly supplied, and non-peritoneal surfaces less abundantly still. (Surgeons well know that exposed muscle is less apt to form adhesions with the omentum than injured peritoneum.) The only properties which give the omentum claim to any inherent protective tendencies are the possession of the abundant *Kittsubstanz*, and its pendent state which permits free movement. (The intestinal loops have to a less extent the capacity for migration.)

CONCLUSIONS

The migrations of the omentum are not due to any peculiar inherent properties. Corn-pith migrates in the same way under the same conditions.

Fibrin formation is the preliminary requisite for migration: no fibrin, no migration.

The movements of the omentum are produced by the same forces that attract cells to any inflammatory field, and the carrying with them of the omental network is a purely accidental occurrence.

1004 Rialto Building.

SURGICAL METHOD OF CLEARING UP CHRONIC TYPHOID CARRIERS

REPORT OF TWO CASES OF REMOVAL OF THE GALL-BLADDER AND THE ENTIRE CYSTIC DUCT

THOMAS J. LEARY, M.D.
First Lieutenant, Medical Corps, U. S. Army
WASHINGTON, D. C.

CASE 1.—C. W. F., aged 27, was transferred to the Walter Reed General Hospital from Fort Benjamin Harrison, Ind., Aug. 27, 1912, suffering from a chronic biliary fistula, the result of drainage of an empyemic gall-bladder. Previous to the drainage of the empyemic condition, the patient had been unsuccessfully operated on for removal of gall-stones. The patient, who was very intelligent, denied ever having had typhoid fever, or any prolonged attacks of fever or diarrhea that might lead one to suspect a previous unrecognized attack.

On admission to the hospital, the patient was suffering from a chronic biliary fistula, which refused to stay permanently healed. For a time this condition was treated by dieting, keeping the fistulous opening and surrounding skin clean and protected by sterile dressings, and keeping the bowels loose by administering sodium phosphate each morning and occasionally a course of calomel, followed by magnesium sulphate. Under this treatment the fistula would cease discharging and stay closed for a period varying from four to ten days. After these irregular periods of closure, the patient would complain of a severe pain in the gall-bladder region. This pain would cause the patient to huddle up in bed or walk the floor in a stooping posture, holding the hands over the gall-bladder region, sweating freely, with irregular fever and wearing an agonized expression. On the passing of a probe into the gall-bladder with release of the pent-up contents, all symptoms would at once disappear.

1. Hertzler, Arthur E.: Tr. Am. Microscop. Soc., xxiii.

The discharge from the gall-bladder was mostly of a clear, glairy mucous nature. Occasionally a very slight bile tinge was noticed. On the occasion of one of these probings, there was some doubt as to whether or not a stone could be felt.

The condition was diagnosed as a hydrops of the gall-bladder, and the patient was told that his cystic duct was occluded by either a calculus or cicatricial tissue, and that it was advisable to have the gall-bladder removed. Operation was not done at once, but palliative treatment kept up and the patient kept under close observation. Several roentgenograms were taken, but failed to reveal anything.

Nov. 19, 1912: Gall-bladder fistula was opened for the relief of pain, and some of the contents caught in sterile tubes and sent to the Army Medical School Laboratory for examination. Report of this examination, received November 26, showed that the specimen contained some bile pigment, a few pus cells and typhoid bacilli.

November 27: Gall-bladder contents positive for typhoid. Urine negative for typhoid. Feces positive for typhoid.

November 30 and December 3, 5, 7 and 10: Feces positive, urine negative for typhoid.

December 12, the patient was etherized, and the gall-bladder and entire cystic duct were removed. A calculus a little larger than a hazelnut was found impacted in the cystic duct. Numerous adhesions were encountered and broken up, or tied and severed between ligatures. The fossa of the gall-bladder was covered over by means of a continuous suture of catgut. The stump of the cystic duct was cauterized with phenol (carbolic acid) and alcohol. All of the scar tissue resulting from the two previous operations and the fistulous tract were removed. A cigarette drain was inserted, its lower end in close relation with the stump of the cystic duct, and the wound was then closed in the usual manner, leaving a small opening for the drain. Fluffy gauze dressings and a binder were applied. Patient left operating-room in very good condition.

Feb. 3, 1913: Patient returned to duty in good condition.

LABORATORY REPORTS ON THE PRECEDING CASE

December 16: Feces positive for typhoid.

December 18: Feces negative for typhoid. Urine negative for typhoid.

December 23: Discharge from surgical wound negative for typhoid.

December 30: Surgical wound about healed. Discharge negative for typhoid.

Jan. 3, 1913: Agglutination 1:160.

January 23 and 25: Feces negative for typhoid.

CASE 2.—M. M., whose family history and early medical history had no bearing on case, stated that he was taken with diarrhea, fever and loss of weight while serving in Cavite Province, P. I., in June, 1910. He did not go on sick report or consult a medical officer for this trouble. September 5, he reported sick at the division hospital, Manila, P. I., and was sent home October 14. During this time he was placed on milk diet and given the ipecac treatment. He was sick in the Letterman General Hospital, Presidio of San Francisco, from Nov. 16, 1910, until March 20, 1911. Nov. 20, 1910, his stools were found positive for typhoid, and every week during his four months' stay there he was given the vaccine treatment against typhoid.

He arrived at the Walter Reed General Hospital, April 10, 1911, for further observation and treatment, his case to be studied in conjunction with the Army Medical School Laboratory. During the summer of 1912, for several months he received his second course of vaccine treatment against typhoid. In addition to his prolonged vaccine treatment, the patient was given the calomel treatment, the buttermilk treatment, sodium sulphite treatment, hexamethylenamin (urotropin) and salol treatment and the ipecac treatment. The patient was constipated a large part of the time while in the hospital and received frequent purges from Epsom salts and castor oil.

Appendicostomy was at one time thought of, but discarded as was drainage of the gall-bladder, patient refusing operation.

Since it is a known fact that the gall-bladder will retain and keep typhoid bacilli alive for an indefinite time, removal of the gall-bladder was thought of and talked of for some time as holding out a possible means of cure, but was not suggested to the patient directly at the time, on account of his aversion to operations and the fact that he was satisfied with his condition of being a recognized typhoid carrier but otherwise enjoying good health. Since the typhoid condition was first recognized in the stools, these were examined daily for a time, and then every few days. None of the treatments given seemed to have any appreciable effect on the typhoid bacilli. Occasionally a report would come back negative, but with this report would come a note from the laboratory saying that the specimen was old and requesting a fresh specimen. The reports would then come back positive. The laboratory reports noted the bacilli to range from plus 1 to plus 90 per cent. The percentage of typhoid bacilli varied irregularly, but the stools contained as many typhoid bacilli just previous to the operation as when they were first found to be positive.

The patient finally consented to operation for the removal of the gall-bladder, and was operated on, Jan. 21, 1913.

A 4-inch straight high rectus incision was made, extending from the rib margin down until opposite the umbilicus. After the anterior sheath had been penetrated, the belly of the right rectus was retracted toward the midline, and then the posterior sheath and peritoneum were opened in the direction of the skin incision. The gall-bladder popped into view and was found to be enlarged and fairly well distended.

On account of the fact that in this case the Mayo method of removing the gall-bladder would necessitate a larger incision, this plan was abandoned and the fundus of the bladder was caught with special forceps and traction made forward and downward toward the umbilicus. This enabled the bladder to be dissected free from its fossa on the under side of the liver, without rupture of the gall-bladder, tearing of the liver substance or troublesome bleeding.

The neck of the gall-bladder and the cystic duct and artery were freed by the same method, after which a ligature of heavy chromic gut was placed about the duct and artery. A clamp covered with rubber tubing was placed gently on the cystic duct below the first ligature to express any contained bile from the duct. A double chromic-gut ligature was then placed below this clamp, at the lower end of the cystic duct. Gauze strips were packed about the duct and the duct severed between the clamp and the lower ligature. The gall-bladder was lifted out of the abdomen and placed in a sterile dish for further examination. The stump of the cystic duct was well cauterized with phenol and alcohol and allowed to recede. A cigarette drain was placed in the fossa of the gall-bladder, the lower end of the drain resting near the stump of the cystic duct. The peritoneum and posterior sheath were closed with continuous gut. The anterior sheath of the rectus was closed with interrupted gut, two or three sutures taking small bites of the rectus muscle. The skin was closed with interrupted silkworm-gut. The protruding end of the cigarette drain was fastened to the skin margin with a silkworm-gut suture. Ruffled gauze was then applied to the wound, over this a gauze cotton pad, and finally a binder.

The gall-bladder and contents, including stone, were sent to the Army Medical School Laboratory, and the contents were later reported as being a pure culture of typhoid. The patient made an uneventful recovery from the operation.

LABORATORY REPORTS ON THE PRECEDING CASE

Jan. 20, 1913: Feces positive for typhoid. Urine negative for typhoid. Blood agglutinates in dilution of 1:320.

January 21: Feces positive for typhoid (before operation). Urine negative for typhoid (before operation).

January 21: Operation.

January 24: Feces negative for typhoid.

January 25 and 27: Feces positive for typhoid (typhoid colonies scarce).

January 29 and 31: Feces negative for typhoid.

February 3, 5, 7 and 8: Urine and feces negative for typhoid.

February 10, 13, 17 and 20: Blood agglutinates, 1:320; urine and feces regular for typhoid.

CONCLUSIONS

The operation of removal of the gall-bladder and cystic duct as a means of curing chronic typhoid carriers was freely discussed by all of the medical officers on duty at this hospital and received the endorsement of all before it was attempted.

It is our opinion that this method of clearing up chronic typhoid carriers is a very valuable one and should be given further trial by military and civil surgeons. I am of the opinion that the treatment of all typhoid carriers should be carried out only in conjunction with the laboratory men and, further, that the different medicinal treatments, but more especially the continued typhoid vaccine treatment, should be carried out thoroughly in the beginning. These methods failing, all typhoid carriers should either be kept quarantined or be operated on for removal of the gall-bladder and all of the cystic duct.

Only time and a larger series of cases will determine whether or not the removal of the gall-bladder and the entire cystic duct will clear up all of these cases. To date we have had the opportunity to carry out this operation on only two chronic typhoid carriers, and both of these cases cleared up within nine days. No after-effects followed the removal of the gall-bladder and cystic duct in either case.

I was assisted in Case 1 by Capts. W. A. Wickline and H. H. Johnson, M. C., and in Case 2 by Capts. W. A. Wickline and L. L. Smith, M. C. All the laboratory reports in the two operations were worked out under the personal supervision of Major F. F. Russell, M. C., of the Army Medical School laboratories.

Walter Reed General Hospital.

"THE BRANCHED FORM OF THE TUBERCLE BACILLUS". AS A SPECIFIC FACTOR IN THE TREATMENT OF HUMAN TUBERCULOSIS

A PRELIMINARY NOTE

SAMUEL G. DIXON, M.D., LL.D.
Commissioner of Health of Pennsylvania
HARRISBURG, PA.

It is evident from the work which has been performed during the past twenty-four years in the biologic treatment of human tuberculosis, that an avirulent form of the *Bacillus tuberculosis* (human) should be used; and, particularly, if a living form is to be employed it should be one which will live a short time in the human body without reproducing itself. We have the first characteristic in the forms I reported[1] in 1889; these produced certain degrees of immunity in mammals,[2] and we have as yet failed to find them reproducing after injection into the organism. I have repeatedly confirmed[3] these experimental results.

1. Dixon, Samuel G.: Possibility of Establishing Tolerance for the Tubercle Bacillus, Med. News, Oct. 19, 1889.
2. Dixon, Samuel G.: Establishing Tolerance for the Tubercle Bacillus, Med. and Surg. Rep., Sept. 6, 1890; Possibility of Checking the Tuberculous Process in Man by the Agency of a Metabolic Product of the Tubercle Bacillus, Med. News, Jan. 17, 1891; Annual Address to the State Board of Health, Proc. Acad. Nat. Sc., Philadelphia, May 15, 1891; Involution Form of the Tubercle Bacillus and the Effect of Subcutaneous Injections of Organic Substances on Inflammations, Proc. Acad. Nat. Sc., Philadelphia, Feb. 21, 1893.
3. Dixon, Samuel G.: The Branched Forms of the Tubercle Bacillus, and Immunity to Tuberculosis, THE JOURNAL A. M. A., March 29, 1913, p. 993.

Before the therapeutic value of the branched forms were tested in the human economy, experiments on lower animals were continued during a number of years. Without question, the branched forms of the human type, as grown in our laboratory, are avirulent and are apparently non-reproductive in culture mediums and in guinea-pigs. Other animals, such as rabbits, opossums and monkeys, have been inoculated with the same results.

The question, however, has always been as to the effect they would have on the human type. In order to study the results of injections of the living branched forms in the human body a culture of the human type was produced in the laboratories of the State Department of Health of Pennsylvania and was kept for a period of two weeks at 50 C. (122 F.). Preliminary studies were made on guinea-pigs, the following being typical of the results obtained:

Guinea-pigs weighing from 370 to 480 gm. were injected intraperitoneally and subcutaneously with 1 and 2 c.c. of an emulsion containing 10 and 20 mg., respectively, of the microorganisms.

Guinea-Pig 1457, weight 480 gm., received intraperitoneally 20 mg., March 12, 1913. The animal showed a constant gain in weight until April 8, a period of twenty-eight days, at which time the weight was 500 gm. After the injection of the emulsion there was considerable induration at the point of inoculation. This, however, disappeared entirely at the end of four days. There was no perceptible systemic reaction at any time.

Guinea-Pig 1458, weight 350 gm., received intraperitoneally 10 mg., March 12, 1913. There was considerable induration at the point of inoculation, which disappeared within three days without evidence of perceptible systemic reaction. The animal showed a proportional gain in weight.

Guinea-Pig 1459, weight 370 gm., received 10 mg. subcutaneously, March 12, 1913. There was very slight induration at the site of inoculation which disappeared within two days; no general reaction was noted. At the end of twenty-eight days, April 8, the weight was 410 gm.

Being convinced from the experimental work carried out that the culture was (as usual) an avirulent one, after years of experimentation with the branched forms in lower animals, my next step was to apply this as a vaccine for the treatment of tuberculosis in human beings. One of my assistants has been doing this recent clinical work. Far-advanced patients (not wards of the state), most of whom had been confined to bed for a period of two months or more, were selected. Several of these patients, while suffering with continuous fever, had a very definite stadium and a few were afebrile. In no instance did the injection of the vaccine cause a rise in the temperature or any clinically appreciable symptoms. In every case, however, there was improvement, which was manifested by the subjective symptoms of the patient and the evidence of a reduced toxemia. The former was noticeable particularly in the gastrointestinal functions. One case in the late emaciated stage is of special interest; although unable to retain food prior to treatment the patient has been able since then to take his nourishment, and has shown an actual gain in weight of 9½ pounds at the end of the third week. The number of cases treated and their character make it unwise at this time to publish details, nor is my assistant, who is conducting this clinical work, willing to make any statement as to the curative effect of the vaccine. Nevertheless he is fully satisfied that there is no reaction following the injection, and that there is a marked improvement. A full history of the cases will be given when sufficient progress is made to warrant any faith in the treatment as a cure.

This preliminary note is made as a matter of record. Other classes of cases are being studied, and a report of the use of these living forms as a specific therapeutic measure in tuberculosis will be published as soon as the results justify its presentation.

The use of my preparations of degreased bacilli (T. B. S.) and watery extract (T. B. E.)[4] is producing results which have not been attained by general treatment alone. This has been noted in the published reports[5] and in the state statistics[6] on its use, but from the experiments so far carried out, there is reason to believe that better results will be obtained by using the living branched forms. The use of these forms in the human economy has been followed by an evidence of benefit which would seem, at least, to justify further clinical use; permanent improvement should be recorded, however, before it is accepted by the profession in place of the present efficient biologic products.

A NEEDLE-HOLDER FOR SUBMUCOUS RESECTION OF THE SEPTUM*

HENRY B. HITZ, M.D., MILWAUKEE, WIS.

The principal feature of this holder is its ability to grasp securely a small curved needle, so that a suture may be passed in any direction, leaving a clear view of the operative field. The needle can be instantly released and as readily picked up again and firmly held, which is a distinct advantage over the Yankauer type. It is made after the straight punch-forceps model, the needle being grasped by the movable end in a diagonal plane. The principal advantage of this needle-holder in submucous work is the rapidity with which suturing can be done in any direction with the least possible traumatism to the frequently thin, fragile, mucoperichondrial flap.

A new needle-holder for submucous resection of the septum.

* Presented Nov. 4, 1912, at the meeting of the Milwaukee Oto-Ophthalmic Club.

4. Dixon, Samuel G.: Pennsylvania Health Bull., October, 1911.
5. Francine and Hartz: Tr. Col. of Phys., Philadelphia, January, 1913; Results with Tuberculin (Dixon's) in Advanced Chronic Ambulatory Tuberculosis, THE JOURNAL A. M. A., March 8, 1913, p. 717.
6. Johnson and Berry: Report of Commissioner of Health, Pennsylvania, 1911; Dept. of Health Bull., November, 1912.

The Physician as a Community Asset.—A well-trained sensible doctor is one of the most valuable assets of a community, worth to-day, as in Homer's time, many another man. To make him efficient is our highest ambition as teachers, to save him from evil should be our constant care as a guild.—Osler.

RECOVERY IN BRAIN SYPHILIS AFTER THE USE OF SALVARSAN

NATHAN B. EDDY, M.D., NEW YORK

The rapid and complete recovery in this case after the use of salvarsan seemed sufficiently unique to make the case worthy of record.

Patient.—F. M., aged 34, married, laborer, was admitted to the hospital Dec. 28, 1912. The family history was of no importance. The patient was moderately alcoholic and had been drinking rather heavily just before the onset of the present illness. He had a severe syphilitic infection in 1903 for which he was treated in hospital one year and discharged as cured. There were no further symptoms until the present time.

Present Trouble.—During December 1912, the patient had several of what he calls weak spells in which he became dizzy and confused, but did not fall or lose consciousness. Shortly after a hearty dinner, about 2 p. m. Dec. 28, 1912, without prodromes, he suddenly fell to the floor in a general convulsion lasting several minutes, which was followed by complete unconsciousness.

Examination.—On admission to the hospital, about 5 p. m. of the same day, the patient was in coma from which he could be partially roused with difficulty. He showed conjugate deviation to the left with nystagmus, small equal inactive pupils, and periodic winking. The respirations were of the Cheyne-Stokes type. The heart, lungs and abdomen were negative. There was a moderate amount of arterial thickening, but the pulse tension was not high. The patient had a flaccid paralysis of the left side with lost reflexes. On the right side the reflexes were normal. Projectile vomiting occurred with incontinence of urine and feces.

Course.—During the night the coma cleared up. After 3 a. m. the patient was restless and irrational a part of the time with periods of semistupor. The pupils were now unequal, the right being larger and reacting sluggishly, the left still small and inactive, with no deviation or nystagmus. All the reflexes were normal with no sign of paralysis.

From the sudden onset and transient nature of the symptoms in a young man, with the history, obtained at this time from the patient's brother, a tentative diagnosis of cerebral syphilis was made, probably an encephalitis with localized exudation. The Wassermann reaction was reported positive December 30. December 31 the patient had again lapsed into coma from which he could hardly be roused, muttering incoherently when questioned. His condition was rapidly becoming worse; the pulse becoming more rapid and weaker with slight cyanosis of lips and finger-tips; the breathing was markedly Cheyne-Stokes. There was slight rigidity of the neck and extremities but no paralysis. The spinal cord was tapped and 40 c.c. of perfectly clear spinal fluid obtained under considerably increased pressure. A cell-count of this showed a slight increase in the total number of cells, the change being chiefly in the epithelial cells.

Treatment and Result.—The man's condition seemed desperate so that in spite of the contra-indication to the use of salvarsan in acute brain syphilis, it was decided to give him the benefit of the doubt. Accordingly, December 31, 0.4 gm. of salvarsan was given intravenously.

The next day his general condition seemed slightly improved but mentally he was the same. On the second day (Jan. 2, 1913) there was noticeable improvement. He was conscious part of the time, answered questions as to his condition clearly, insisted on feeding himself, and used both hands equally well.

From now on the progress was rapid and constant. At first he was drowsy a good deal of the time and when awake noisy, alternating between hilarity and depression. The following week he was very voluble with silly fabrications. January 25, he was permitted to get out of bed and on the 29th was walking about the ward quite himself, rational all of the time, and completely oriented, with fair memory of events immediately preceding his illness.

Further treatment was as follows: January 15, 0.3 gm. salvarsan, intravenously; January 22, 0.75 gm. neosalvarsan, intramuscularly; February 6, 0.9 gm. neosalvarsan, intramuscularly. In addition intramuscular injections each of 1/2 grain of salicylate of mercury were given once a week.

During this time the patient's temperature was constantly flat normal except for slight rise in the first twelve hours after each salvarsan injection. The urine was always negative and blood-counts were normal.

A second Wassermann reaction, Feb. 3, 1913, was still strongly positive but not quite so much so as previously.

When the patient was discharged from the hospital, Feb. 8, 1913, the pupils were normal, gait and station ordinary, heart, lungs and abdomen negative. Mentally, he showed a slight tendency to be silly and inconsequential, but according to his wife and friends recovery was quite complete.

320 Concord Avenue.

COMPLETE SITUS TRANSVERSUS

WILLARD J. STONE, M.D., TOLEDO

Reports of complete transposition of the viscera are but infrequently encountered in the literature. Because of the relative rarity of the condition, therefore, the following case report may be of interest.

History.—J. G., Italian, male, aged 22, Oak Harbor, Ohio, laborer, was admitted to the medical service at St. Vincent's Hospital, Oct. 6, 1911. The family history revealed nothing of importance. The personal history revealed no serious previous disease. The patient had never been in the tropics. His present illness began about one month prior to admission, with frequent chills and a continuous type of fever ranging daily between 101 and 103 F., during which time he had lost about 23 pounds in weight. His main complaint was referred to pain beneath the edge of the lower ribs on the left side. The patient believed that his illness was the result of an accident, which took place about one month before the illness began, in which he fell against an iron joist, striking the left side below the ribs.

Physical Examination.—The position of the apex-beat was slightly external to and below the right nipple. The area of cardiac dulness extended to the left to the midsternal line, at which point resonance was encountered continuous with resonance over the normal heart area. In the sixth interspace, left parasternal line, dulness was found which extended to the left as far as the midaxillary line and posteriorly to the angle of the scapula. This dulness in front and behind extended to the edge of the ribs and did not, on auscultation, reveal the presence of any air-containing tissue beneath. Vocal fremitus was not present, nor was this area of dulness movable on change of position. The normal liver dulness could not be made out on the right side.

The leukocyte count numbered 19,600. Examination of the urine was negative to pus and all abnormal ingredients.

Diagnosis.—It was at first thought that the patient had a so-called "sacculated" pleurisy with effusion involving the lower left chest with displacement of the heart to the right and a compensatory emphysema of the right lung, which had pushed the liver downward below its normal position. The fact, however, that dyspnea and cough were absent and that breath sounds could not be heard over the area of dulness on the left, and that the dulness was not movable on change of position, seemed to exclude such a possibility. An enormous pericardial effusion was considered, but the distinctly visible apex-beat and a distinct area of resonance between the heart dulness to the right and the dulness encountered to the left and below, rendered such a condition improbable.

Roentgen Examination.—Two days after admission skiagrams were taken by Harry W. Dachtler which clearly showed complete transposition of all the organs. The liver was found to be occupying relatively the same position on the left side as normally on the right, while the stomach was found on the right side. The heart was found in relatively its normal

position as regards its long axis, except that it was on the right side.

Further History.—The leukocytes two days after admission numbered 28,400. The continuous type of temperature with evidence of sepsis and occasional slight chills made it necessary, in view of the skiagraphic findings, to consider the possibility of appendiceal abscess on the left side, a suppurating gall-bladder on the left side, a liver abscess or a subdiaphragmatic abscess likewise on the left side. The patient's greatest pain and tenderness were found to be just below the edge of the ribs, but no mass or tumefaction was present except when in the upright position at which time a slight bulging or prominence was present on the left side in the flank.

The history of previous trauma to this area and other facts finally led to a diagnosis of probable extraperitoneal perirenal abscess. An incision was therefore made in the left flank Oct. 14, 1911, by the late Dr. Peter Donnelly under nitrous oxid-oxygen anesthesia and about 6 ounces of pus evacuated from an abscess about the left kidney. Cultures from the pus showed *Staphylococcus pyogenes albus.*

After about three weeks' drainage, the patient's recovery was practically completed.

FATAL PERITONITIS DUE TO INFECTION WITH BACILLUS COLI*

ARTHUR L. GROVER, M.D., IOWA CITY, IOWA

The following case of septic peritonitis is of interest as it was proved to have resulted from infection with *Bacillus coli*, and as infection of the peritoneum with the colon bacillus, through the uterus, is somewhat rare. The material from this case was referred to this laboratory by Paul Reed, M.D., Nov. 7, 1912, with the following history:

History.—Woman, aged 35, married, had a child, aged 4 months, and had menstruated atypically since delivery. She was ill for two days with severe pain in pelvis. Examination on third day showed no fever present but a foul-smelling vaginal discharge, and severe pain in pelvis. Next morning the patient had all signs of general peritonitis which rapidly grew worse. She died during the morning of the next day (fifth day after onset).

The patient denied any attempt at abortion either by herself or by any one else. Her husband admitted that the patient had previously attempted to induce abortion in a former pregnancy. At the time of her childbirth, four months previously, the patient complained of severe pain in the right side, and examination was extremely painful, the patient being prostrated following it.

Necropsy.—After the death of the patient, the uterus was removed by vagina together with some fluid from the peritoneum. The uterus was somewhat enlarged, and the wall was thickened and felt soggy. At the top and just slightly posterior was an area about 2 inches in diameter that was denuded of its peritoneum and was rough and necrotic. In the center of this spot was an opening which led into the uterine cavity. A pencil fitted nicely into this canal. When a cut through the tissues was made, along the pencil, an area of extreme necrosis, brown and extremely fragile and crumbly was found along the course of perforation. The mucosa also was inflamed throughout, was necrotic about this area of perforation and contained a slight amount of débris. Sections were made through the uterine wall at the area of perforation and showed that the process was localized in a marked necrosis of this area, severe enough to be called gangrene. The vessels throughout the uterus were congested, and hemorrhagic exudate was present on the peritoneal surface. Gram-negative bacilli were seen in the tissue about the area of necrosis.

Laboratory Findings.—A bacteriologic examination was made of the fluid removed from the peritoneal cavity. Smears showed an immense number of Gram-negative bacilli which varied somewhat in size. On agar-slants in twenty-four hours we obtained a diffuse white streak with discrete, round, white, slightly raised colonies at the periphery. A fecal odor was present. Examination showed them to be Gram-negative bacilli resembling those seen in the smears made from the peritoneal fluid.

Further cultures showed that gelatin was not liquefied, that litmus milk was curdled and made acid, that gas was found with all sugars and in fermentation tube with lactose broth and that indol was found in Dunham's peptone solution. The following litmus sugar serum water media were used: dextrose, levulose, galactose, lactose, saccharose, maltose, mannite and dextrin. All were made acid and produced gas except dextrin.

Conclusions.—From the evidence it would seem that the organism in question fulfilled all the requirements of *Bacillus coli*. According to some authorities dextrin also should have been fermented; according to others, it should not.

Cases of peritonitis caused by the colon bacillus are common, and cases of uterine infection with the same organism are common, but this combination of *B. coli* peritonitis through perforation of uterus is not common. As the patient would acknowledge nothing, no light can be thrown on the instrument used or on how such a large perforation could have been made without more shock. It is not known that the perforation was made artificially, but it seems as if no other explanation is possible, since the attending surgeon did nothing more than tampon the cervix to increase dilatation. Of course the four months since last pregnancy is sufficient time in which to become pregnant, yet one would hardly suppose that the patient could have become far enough advanced in pregnancy to be cognizant of the fact. Nevertheless in some manner the uterus became perforated. So far as it is possible to tell one would believe that the lesion was not of long standing. No attempt has been made to go through the literature on this subject.

527 North Linn Street.

* From the Laboratory of Pathology and Bacteriology, State University of Iowa, College of Medicine.

BURN OF EYEBALL DUE TO CAUSTIC CONTENTS OF GOLF-BALL

L. W. CRIGLER, M.D., NEW YORK

William J., aged 10, on Aug. 2, 1912, while dissecting a golf-ball, ruptured the small rubber bag in the center of the ball, and the contents spurted into his right eye. This caused immediate, excruciating pain, lacrimation, photophobia, redness and edema of conjunctiva. The surface of the cornea became opaque. The child was attended by a local physician, who irrigated the conjunctival sac and applied cold compresses. The patient was first seen by me on August 7, five days after the injury. The eye presented the picture of a typical caustic burn of the cornea and conjunctiva. The conjunctiva showed numerous areas of necrosis, some large, some small. The cornea was opaque to the extent of being almost white. The destruction had extended into the substantia propria; the pupillary border of the iris could scarcely be seen, and vision was reduced to shadows. The patient was admitted to the hospital and the usual remedies were applied, with no material alteration of the progress of the case toward cicatrization. The eyeball remained irritable and painful. At one time during the height of the inflammation the tension seemed increased. This was followed by a gradual diminution of tension until the eye became quite soft. It looked as if it were going on to phthisis. After the more aggravated symptoms were relieved, the child was allowed to go home, making subsequent visits to the hospital once a week up to the present. The cornea is becoming slightly more transparent, and the areas of necrosis in the conjunctiva have undergone cicatrization. The palpebral conjunctiva escaped a great deal of the caustic action of the alkali. Vision in the eye is slightly improved, the patient being able to count fingers at one foot.

An analysis of the paste in the center of a golf-ball said to be of similar make to the one causing the accident showed that it consisted of a mixture of barium sulphate, soap and a free alkali (sodium hydroxid, 2.4 per cent.).

40 East Forty-First Street.

Special Article

BACTERIAL VACCINE THERAPY: ITS INDICATIONS AND LIMITATIONS*

INTRODUCTORY CONSIDERATIONS

RAPID DEVELOPMENT AND EXTENSIVE USE

From comparatively small beginnings, the practice of what is now called bacterial vaccine therapy has come to assume proportions of great magnitude. Six or seven years ago an occasional worker well trained in the methods of bacteriology and immunology prudently felt his way in the pursuit of opsonic therapy, as it was then called. At present a large number of practicing physicians are inoculating their patients with bacterial vaccines. There has been a vast stride in an incredibly short interval.

A few years ago all bacterial vaccines were prepared from the patient's own lesions and reintroduced into that patient for therapeutic purposes (the so-called "autogenous" vaccines); to-day vaccines of all probable (and no doubt some improbable) pathogenic bacteria are procurable in the market, ready for use, with real or fanciful indications for their employment. This too has been an amazing development

Formerly the autogenous bacterial vaccines were cautiously administered by the expert bacteriotherapeutist under the guidance of the opsonic index. Now any physician, although incapable of making a bacteriologic diagnosis and without special training or acquired skill, is supposed to be competent to inoculate patients with all sorts of commercial vaccines, employing no accurate check on the results. This marks a transition so abrupt, so revolutionary and so unprecedented in medicine that it behooves us to pause and to ponder deliberately; for at this juncture (to paraphrase from its own terminology), we are in what may be styled the "positive phase" of bacterial vaccine therapy, and we must determine whether it is to be followed by a disastrous "negative phase," or to be directed to a sustained "high tide" of creditable success.

No other new and special field of medicine calling for extraordinary and often prolonged training has been so quickly invaded by the mass of the profession. In little more than half a decade a method of biologic treatment of unusual intricacy, the value and limitations of which are still far from being accurately determined, has gone into the hands of the medical profession as a whole. Although the profession does not recognize that a scalpel and a license to practice make of any physician a skilled and competent surgeon, it has come to pass that the possession of a syringe and a bulb of commercial stock vaccine implies an expert bacteriotherapeutist.

ADVENT OF COMMERCIAL VACCINES

In the pioneer days of this new method of treating disease the remedial agents (bacterial vaccines) were usually of the variety known as personal or autogenous. At any rate they were prepared by skilled bacteriologists who had thoroughly qualified themselves for this particular task and who had made the bacteriologic diagnosis. The administration of these vaccines, when not undertaken by their maker, was performed under his guidance. In this manner a close personal touch of the expert with the patient was assured.

The striking success which not uncommonly followed the use of these bacterial vaccines attracted the attention of physicians in general through direct observation of a given patient, from hearsay through other physicians, or even through the reports of other patients. The request for serum or vaccine treatment by patients themselves played its not inconsiderable part. As an outcome of this kind of suggestion, a demand arose for some alternative which would permit the new treatment to be instituted by physicians whose previous training had not qualified them to perform the requisite bacteriologic examinations or to make the necessary bacterial vaccines. It was to meet this demand that the commercial production and exploitation of bacterial vaccines arose.

For a few of the more obvious infections like boils or carbuncles in which the bacterial causative factor has been pretty thoroughly established, there is no great difficulty in selecting a corresponding vaccine; but in a large range of infections in which different bacterial species produce the morbid condition, as pharyngitis, in which the staphylococcus, streptococcus, pneumococcus, pneumobacillus or influenza bacillus or a combination may act as offending parasites, a difficult task confronts the practitioner.

It was to meet this emergency, solely the outcome of unscientific procedure, that there arose the unscientific practice of using "mixed" vaccines — vaccines compounded to include a number of different bacterial species in a single dose, aimed at the undetermined infection after a kind of "shotgun" logic, in the hope that one of the components would perhaps hit the mark. Further, there is the case of mixed infection in which more than a single bacterial species is active; here again it becomes a question of accurate bacteriologic analysis and the use of the indicated autogenous or corresponding stock vaccines. As the remedy for this lack of skill, mixed stock vaccines, often fantastic in their composition, are proposed by the manufacturer. It is but a step further to the production of semisecret mixtures of complex, unstandardized and dangerous bacterial poisons, vaguely aimed at "mixed infection" and advocated as a panacea for microbic infections generally.

VACCINES EASILY AND CHEAPLY MADE

Unlike therapeutic serums, in the manufacture of which the outlay and maintenance expenses are considerable, bacterial vaccines can be produced cheaply. Consequently, with a growing demand it was natural to find manufacturers increasing in number beyond reason. With increase of numbers came stress of competition. This has led to a lengthening list of varieties of stock vaccines and vaccine mixtures, with exaggerated and unwarranted claims for their therapeutic efficiency. Here also enters that needlessly complicating factor of containers for commercial stock vaccines, until a bewildering array of bottles, bulbs, ampules and syringes of various kinds has been forced on the physician to promote his helpless dependence on the manufacturer, and to increase the cost of the products.

NEED FOR A WORKING GUIDE

In the midst of this chaotic situation the prudent and thoughtful physician finds himself sorely perplexed. There is no authoritative non-commercial recent source of information which indicates to him how far he may avail himself of manufactured stock bacterial vaccines, or to what extent the claims for their therapeutic value

* This series of articles has been prepared under the direction of a committee appointed for the purpose by the Council on Pharmacy and Chemistry of the American Medical Association. The committee consists of Drs. Ludvig Hektoen, Chicago; David L. Edsall, Boston; John Howland, Baltimore; Reid Hunt, Washington, D. C., and Albert P. Ohlmacher, Detroit.

may be credited. He who would use and not abuse bacterial vaccine therapy has no unprejudiced guide as to its administration, value and limitations. The fundamental difference between curative and immunizing serums, and prophylactic and therapeutic bacterial vaccines is not clearly defined in the minds of many physicians.

In fact, one would not go far wrong in asserting that a large proportion of the medical profession fails to distinguish clearly between serums and vaccines. All this needs elucidation in a manner sufficiently devoid of theoretical and technical complications to insure its ready reception by the busy practitioner, and from the practical standpoint to be sufficiently exhaustive to furnish a reliable working guide to vaccine therapy in its present status. These are the objects which underlie the contemplated series of articles of which this is the introduction.

(To be continued)

Therapeutics

MANAGEMENT OF THE PATIENT BEFORE AND AFTER OPERATION

Routine treatment is generally bad treatment, and this is especially true before and after operation. Each case must be individualized, and often preparation for the operation and care after the operation are of more importance than the technic of the operation.

Fortunately, it is now generally recognized that the anesthetist should be, if possible, one who has specialized in that work. At least, it is recognized that the anesthetist should be selected carefully, and that the giving of the anesthetic should not be left to the youngest intern, or to the physician who happens to refer the patient to the surgeon for operation. Bad as it is for the surgeon to have a clumsy, untrained assistant, even this is safer than to have the anesthetic administered by one who does not well understand the best method of administering it and the care with which the patient should be watched. We should recognize more fully that the somewhat opprobrious statement that "the operation was successful but the patient died," or "the operation was successful but the patient never recovered his strength," or "the operation was successful but a serious complication occurred," many times represents the fact that the care before and after was neglectful or incorrect. The mere technic of the operation and the quick and proper healing of the part operated on are only a certain portion of the operative risk and the operative result, their proportion, of course, varying with the part operated on and the seriousness of the condition found.

BEFORE OPERATION

Unless the operation is for an emergency and to save life, the following points should be determined carefully: (1) strength of the heart; (2) blood-pressure; (3) kidney sufficiency; (4) condition of the stomach; (5) condition of the bowels; (6) condition of the thyroid, and (7) ability to sleep.

The strength of the heart, the blood-pressure and the kidney sufficiency are so closely correlated that they may well be discussed together. The presence of heart murmurs or of an enlargement of the heart is readily determined. An enlarged heart with valvular lesions may be better able to withstand an operation than a heart that is apparently normal in size without valvular lesions, but with a weakened myocardia. The blood-pressure also is readily determined, and the range of diastolic and systolic blood-pressure many times gives the range of cardiac muscle-efficiency. There are several methods of determining cardiac strength, the simplest of which perhaps is the relative rate of the pulse on sitting, standing and lying, and the increased rapidity on slight exertion. Normally, on lying down the pulse should soon become much slower. If the patient is already in bed, sitting up or even turning over will show what slight exertion will do. If the rapidity is greatly increased and lasts more than a few minutes, the heart is not strong. A very low blood-pressure, down to 100 mm. of mercury, in an adult shows that the heart is weak. A blood-pressure over 140 in an adult should be very carefully interrogated from the arteriosclerosis standpoint and from the kidney standpoint.

An examination of the twenty-four-hour specimen of urine on the ordinary diet of the individual will show not only whether sugar, albumin and casts are present, but also the estimated excretion of solids, nitrogen and the more important salts. If nephritis is present, or if an insidious interstitial nephritis is suspected, the prognosis of the operation, especially if the anesthesia is prolonged, is not good. No harm may be done, but such kidneys can readily stop secreting. If the blood-pressure, the strength of the heart and the kidney efficiency are found satisfactory, the prognosis from these points of view is splendid. If the kidneys are slightly incapacitated but the operation must be done, a few days on a diet without meat and with increased starches will render the patient much less likely to develop uremia, acetonuria or acidemia.

The next important considerations are the condition of the stomach and the bowels, and the ability of the patient to digest his food properly. The presence of such conditions as dilated stomach, motor impairment of the stomach, duodenal congestion with more or less absorption of bile, intestinal stasis with impacted feces, perhaps, or colitis, and putrefactive and fermentative toxins and products which may be absorbed, should be determined and as many of them improved or eradicated as possible. At any rate, unless the operation is for an emergency, the surgeon or the physician in the case should be thoroughly alive to the presence or absence of these conditions.

The prolonged starving of a patient from twenty-four to forty-eight hours before an operation, and the profuse purging of the patient with more or less drastic cathartics for twelve or twenty-four hours before the operation are not a good preparation for operation Such treatment should be condemned. The patient may have a clean gastro-intestinal canal, but he has, many times, a seriously lowered blood-pressure and weakened heart, and he goes to the operation without the strength that he should have or the strength that he did have. There is no question but that the diet for a few days, especially for twenty-four hours, before an operation should be the simplest. Perhaps it is best that the patient receive no meat, but he should receive plenty of starches and carbohydrates. The more he can store up of this kind of nutriment the less is he liable to postoperative vomiting and the danger of acetonuria or acidemia, which is doubtless the cause of death in a great many postoperative patients.

Quite generally surgeons prefer to operate on a patient early in the morning. The patient in this instance has probably had nothing to eat since 6 or 7 p. m. the day before. Normally, an individual is at his lowest temperature, lowest blood-pressure, and lowest cardiac strength

from four to eight in the morning. The patient is thus caught at a disadvantage. The advantage of operating at this hour is in the probability that the patient has slept during the night, and therefore has not had as many hours of worry about the operation that is to come as he would have if the operation were done later in the day. Other things being equal then, it may be well for the majority of operations to take place in the morning from 8 to 9:30. The patient, however, should certainly have some stimulant such as a cup of coffee, with sugar, but without milk, two hours before the operation. If the operation is not to be done until between 10 and 12 o'clock in the morning, the patient should have a cup of malted milk or thin oatmeal gruel at 6 in the morning, and then a cup of coffee, as described, about 8. A prolonged starvation period is not sensible.

The caffein of the coffee will raise the blood-pressure, and this increased pressure is needed in many operative cases. If the patient already has a high blood-pressure, the objection might be made that it should not be raised. On the contrary, such a patient is accustomed to a high pressure, and will be as much weakened by the sudden loss of accustomed pressure as the individual whose blood-pressure is normal or low. Therefore there is no harm in the caffein stimulation.

There can be but one opinion in regard to the advantage of thorough evacuation of the bowels before operation. Just what cathartic should be selected must depend on the patient's condition, and whether or not the operation is to be performed for stomach or intestinal disease. It should never be forgotten that, simple as saline cathartics seem to be, if there is circulatory weakness such cathartics increase that weakness—sometimes seriously. Drastic cathartics are rarely indicated. The most drastic that should ever be administered is one or more compound cathartic pills, and these are generally unnecessary. A compound aloin tablet, such as aloin 0.02 gm. (1/3 grain), sulphate of strychnin 0.0015 gm. (1/40 grain), powdered ipecac 0.03 gm. (½ grain), and extract of belladonna 0.006 gm. (1/10 grain), with one or two grains of calomel administered either after a meal or with milk ten or twelve hours before the movements are desired, will generally prove efficient. If the action of the bowels does not occur at the time expected, an enema consisting of an ounce of glycerin mixed with an ounce of water will quickly give satisfactory results. Such a movement of the bowels should be arranged for on the afternoon or evening before the operation. Two or three hours before the operation the patient may receive, if the surgeon desires, an ordinary soap and water enema of such amount as the surgeon orders. A colon wash may be deemed advisable. If it is desired merely to empty the rectum or sigmoid flexure and lower colon, a small enema will be sufficient. Prostration will seldom result from this care of the bowels.

In operations, on women especially, the condition of the thyroid gland should always be considered; not that there is often hypersecretion of the thyroid sufficient to cause cardiac weakness, but it may be present. A rapid heart may be due to such a cause, and if a prolonged hypersecretion of the thyroid has been present, there may be considerable cardiac debility. Postoperative shock, also, is sometimes due to too much thyroid secretion. When an increased thyroid secretion is diagnosed as having been present for some time, and especially when the patient is in an excessively nervous state (which will give an acute increased thyroid secretion), it may be wise to administer a hypodermic injection of morphin before the operation. As a routine practice the administration of morphin or morphin and scopolamin is not good treatment. It is too well understood to need more than brief mention that in hyperthyroidism operations should not be done until a prolonged rest with proper diet and proper treatment has diminished the secretion and the toxicity from the secretion.

The sleeping habits of the patient should be investigated before operation. The patient who cannot sleep well for days or weeks prior to an operation will not sleep well without aid after an operation. Neither will a series of sleepless nights before an operation conserve reserve strength for the operation shock. It is often wise to give hypnotics to cause good sleep for several days before, and especially on the night preceding the operation. However much malaise or slight debility most hypnotics cause, they will do less harm than a series of sleepless nights.

AFTER OPERATION

Albumin and casts are found in the urine so frequently after etherization that they should almost be expected, especially the albumin, after all prolonged operations. There may be a bare trace, or there may be a considerable amount. The only seriousness in such a condition is in case the albuminuria persists and the casts increase, or there is little or no kidney secretion. The profuse perspiration that has occurred during the operation, the nausea and vomiting, and the small amount of fluid that is ingested for some hours, cause a diminished secretion of urine, which is always a disadvantage. The greater the quantity of urine excreted apparently the better for the kidneys, and it is certainly better for the elimination of toxins left in the blood and tissues from the anesthesia. It is also necessary for the patient to receive water as soon as possible in order that the circulation may be carried on well and the blood-vessels sufficiently filled. More fluid is needed in the blood-vessels than usual because of the vasodilatation, relaxation, and, perhaps, the dilatation of the abdominal blood-vessels both on account of the prostration normally following anesthesia and operation, and on account of necessary disturbances in the abdomen during abdominal operations.

It is not purposed here to discuss the treatment of shock, but other things being equal, the preventives of shock are: surface warmth to prevent loss of heat; conserve abdominal tone with bandages; the prevention of acute pain by morphin hypodermatically, generally with atropin, which prevents morphin depression, contracts the blood-vessels, and prevents too profuse perspiration; and the administration of liquids as soon as possible.

Continued and persistent nausea, especially with vomiting, promotes prostration and even shock. Many hours of such inability of the stomach to take nourishment tends to promote an acetonuria and an acidemia and allow complete prostration and toxemia, terminating in death. The great opponents to acetonuria and acidemia are starches and carbohydrates; hence as soon as the stomach will retain the nutriment, the patient should be given, in small amounts at a time, strained oatmeal gruel or something similar.

While small pieces of ice dissolved in the mouth, and sometimes teaspoonfuls of iced water, tend to prevent vomiting, teaspoonful doses of hot water are generally more successful. If a patient vomits mucus or bile or more or less digested blood, he should be given a large cup of hot water so that he will wash out his stomach. Later, bicarbonate of soda, in 1 or 2 gm. (15 or 30

grain) doses, dissolved in water may be added. If this alkali is absorbed, it will aid in preventing acidemia, and will also aid in the cleansing of the stomach by the water, either by being vomited or passed on into the intestine. If the vomiting persists and bile is regurgitated constantly, sometimes a few drops of dilute hydrochloric acid given with a little water will cause the pylorus to close. If two or three small doses (5 drops at a time) do not produce this result, the treatment should not be continued, as it might aid in causing an acidemia. Sometimes passing a stomach-tube is advisable, but this is so disagreeable, and so often increases the nausea and vomiting that it should not be resorted to frequently. If an acute dilatation of the stomach seems to have occurred with inability to empty itself either through the pylorus or through the mouth, then there can be no question of the advantage of washing out the stomach.

If the patient is unable to retain any nutriment in the stomach, and acidemia or acetonuria is diagnosed, large doses of sodium bicarbonate, in solution, may be given by enema. The advisability of giving sodium bicarbonate solutions subcutaneously or intravenously may be considered, but they may do harm. If sodium bicarbonate solutions are not retained in the stomach, sodium citrate solutions may be tried.

Small doses of morphin, given hypodermatically, to stop vomiting, may be considered, such doses as 1/10 to 1/8 grain. It must be remembered, however, that some of the morphin will be excreted into the stomach and may later cause more vomiting; this, however, is often controlled by hot water.

This serious nausea and vomiting are always lessened with circulatory improvement; therefore any treatment that improves the heart strength and the blood-vessel tone will improve the circulation in the stomach and liver and decrease the liability to vomiting. Unless coffee or tea is retained in the stomach (and caffein is one of the best cardiac stimulants and vasopressor substances) caffein may be given hypodermatically, or strychnin or camphor, or the blood-pressure-raising substance of pituitary secretion. As previously stated, it is not the object of this article to discuss the exact treatment of shock. But it should be remembered that to push strychnin hypodermatically in the treatment of shock is an error. Strychnin may not raise the blood-pressure at all, and may simply overirritate the heart and nervous system.

Unless there is a large amount of intestinal gas and distention, it is not necessary to cause a movement of the bowels for at least two days after the operation, perhaps longer. Colon gas may be removed by the rectal tube. The simplest method of causing an evacuation of the bowels, at least of the colon, is by the injection of an ounce of glycerin with an ounce of water as suggested previously. A glycerin suppository cannot equal the efficiency of this injection. If there is intestinal paresis, hypodermatic injections of eserin (physostigmin), intramuscular injections of an aseptic ergot, and in certain conditions injections of atropin may act very efficiently.

The tendency of the heart to become dilated after operation should cause the greatest of care in not allowing a patient to sit up, rise suddenly, or use his strength in any way, until the blood-pressure has returned to what is satisfactory for the individual. Many a heart has been injured because a surgeon wished his patient to have another position for a dressing, or because he wished to make a record of the time his patient was in bed. All this is of no moment. The decision should be made as to whether the patient has the cardiac ability and the circulatory ability to sit up, to get up, to walk, to travel, and until he has this ability he should remain in bed, all time speed to the contrary notwithstanding. Just whether it is better for a patient to be placed in the Fowler position to cause abdominal drainage, is an entirely different matter. If his future safety seems improved by such a position, he must be placed in it, even if the heart is sometimes weakened.

POSTOPERATIVE SUGGESTIONS

1. Stop anesthesia as soon as the operation is over, as it has been demonstrated that the greater the amount of anesthetic given, the greater the likelihood of kidney disturbances, and the greater the shock. This caution refers to the fact that sometimes the anesthesia is considerably continued for a prolonged and tedious dressing.

2. As the patient immediately after operation rapidly loses heat he should be uncovered as little as possible during the dressing, and warm blankets should be placed about him, lest severe chilling occur and be one of the causes of shock.

3. The dressing should be done as rapidly and with as little general disturbance of the patient as possible, and unless it is absolutely necessary, the patient's head and shoulders should not be raised much during the bandaging.

4. The bed should be warmed, great care being taken that no blistering of the patient's skin occurs from hot-water bags.

5. Pain should be stopped.

6. Absolute rest should be given. Talking, noise, questioning, or fussy, unnecessary disturbances about the bed or room should not be allowed.

7. The first urine should be analyzed carefully.

8. The length of time that the patient should be allowed to go without passing his urine before catheterization depends on whether or not the bladder is found to be full. If there is any doubt, and the patient cannot pass his urine, catheterization, with the greatest possible asepsis, should be done. When catheterization has been done more than once hexamethylenamin should be administered, in 5-grain doses, three or four times in twenty-four hours, for several days, unless there is some condition of the stomach that will prevent it.

9. Water should be given as soon as practicable, and frequently. A thin cereal should generally be the first food, and should be given two or three times a day.

10. Severe pain from after dressings should not be allowed, if it is possible to prevent it.

11. Patients should not be allowed to sit up or get up until the blood-pressure is shown by actual measurement to be nearly, if not absolutely, correct for the individual. Whether or not cardiac tonics should be administered must depend on the individual patient.

A Case of Landry's Paralysis Caused by Salvarsan Intoxication.—R. Fleischmann had a syphilitic patient who thirteen days after a second injection of salvarsan was attacked by a typical Landry's paralysis, from which he died. He believes it was caused by the salvarsan and not by the syphilis, because a Wassermann examination of the blood and spinal fluid was negative at the onset of the paralysis, there was no lymphocytosis, no infiltration of the vessels and no sign of meningitis or myelitis, as in syphilis, but there were atrophic changes of the ganglion cells which even Benario concedes to be evidence of a toxic effect of the salvarsan. Fleischmann's report was published in the *Zeitschrift für die ges. Neurologie*, 1912, xiv, 125.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading-matter.

SATURDAY, APRIL 26, 1913

THE GROWING PROMINENCE OF URINARY CREATIN

In reviewing the progress of diagnostic methods, one almost gains the impression of the existence of eras, as it were, in which the important advances have been confined largely to a single field of endeavor or a special type of technic. The progress of bacteriology emphasized the importance of the microscope as a help in diagnosis; the renewed study of the heart and the circulation has directed attention to the use of certain forms of physical apparatus like the manometer or pressure-gage; immunology is bringing the test-tube into competition once more with the section knife; while the modern advances in the field of nutrition study have made the chemical laboratory an indispensable adjunct to every scientific outfit in experimental medicine. It is no less interesting to watch how these shifting tendencies reflect themselves in the equipment of the practitioner. What one day is a highly specialized reaction or an unusually complicated apparatus, reserved for the exclusive use of a few initiated or superbly trained men set apart from the usual work of the every-day doctor, soon may become incorporated as a part of busy routine and indispensable outfits. So it was with the microscope, with the hemocytometer and hemoglobinometer, with the blood-pressure apparatus, and with serum tests, and with respiration and anesthesia devices. The transitional stage may be noted with instruments like the polygraph for simultaneous records from various parts of the circulatory domain — devices which not a few of the hospitals now require, while the electrocardiographic outfit and the metabolic respiration apparatus are still reserved for a select and inconspicuous minority.

If Chemistry has fared less well in this triumphant progress it is, perhaps, because her claims are less well understood and her technic less easy to acquire. But there are signs of potent change even here. A few years ago the urine was looked on essentially as a solution of urea and salts; and aside from the presence of distinctly abnormal constituents like protein, sugar, blood or bile, the only question asked concerned the quantity of urea. This narrow outlook into the field of perverted metabolism is rapidly being widened. Urea, uric acid, creatinin, creatin, hippuric acid, ammonia, amino-acids, etc., are types of nitrogenous urinary components, each of which has its own independent history — each a story of specific importance to tell. Already we hear the inquiry made here and there in familiar practice as to the content of ammonia in the day's output in relation to possible acidosis; purin-free dietaries find their advocates just as a carbohydrate-free regimen has its place in therapy; the efficiency or usefulness of either finds its expression in the chemical composition of the urine.

The story of creatinin and creatin is still for the most part unfamiliar, as it is indeed still obscure. Not long ago urinary creatinin was regarded merely as the end-product of creatin ingested in meat, since the output was found to be increased by the intake of muscular tissue or meat extracts. Yet despite the fact that neither creatin nor creatinin is found in familiar plant forms, vegetarians were known to excrete creatinin. With the introduction of satisfactory methods of analysis it became clear at length that urinary creatinin for the most part has an endogenous origin in man. The output for the individual (on a creatin-free or creatinin-free, that is, meat-free, dietary) is practically constant, varying with the size of the individual. Now and then creatin was observed to accompany the closely related creatinin in the urine, first in starvation, then in certain diseases, subsequently in the case of the young in contrast with adults, and also in the period following pregnancy.[1]

What is the significance of this aberrant appearance of creatin in the urine? It is too early to give a decisive answer to the question; but the rapid extension of our knowledge gives promise of a solution to the inquiry in the not too far distant future. Certain pathologic conditions in which creatin is found to be eliminated have one factor in common with starvation in which it is uniformly observed; namely, the carbohydrate metabolism is known to be abnormal. The creatin excretion induced by starvation can be cleared up by feeding carbohydrate. Creatin is excreted in diabetes. Such facts have led to the assumption of an intimate relationship between the metabolism of carbohydrates and that of creatin. Indeed, the carbohydrates unquestionably play a more important part than that of simple sources of available energy. It is now appreciated that the adequate catabolism of fats in the body is in some way dependent on carbohydrates, which is indicated by certain features of ketonuria in which the sugars fail in the organism. In other words, many metabolic phenomena become abnormal in the absence of carbohydrates or when they cannot properly be used in the body. It is not strange, therefore, if creatin and creatinin metabolism manifest abnormalities when the carbohydrate store becomes unavailable. The situation has been summed up by saying that creatin metabolism, together with many other biochemical changes in the organism, goes wrong

1. The literature on the subject will be found referred to in the papers of Mendel, L. B., and Rose, W. C.: Experimental Studies on Creatin and Creatinin, Jour. Biol. Chem., 1911, x, 213.

in the absence of carbohydrate; but, on the other hand, an abnormal creatin metabolism does not mean an abnormal carbohydrate metabolism.

The excretion of creatin by women, post partum, which was first described by Shaffer,[2] has generally been supposed to be due to the involution of the uterus whereby creatin was liberated from the breaking down of the muscular tissue of the retrograding organ into the bloodstream, and excreted. The same sort of explanation has been offered for its appearance in starvation and diseases such as cancer which are accompanied by enforced inanition. Here the rapid wasting of the patient, with attending disintegration of the voluntary muscle, has been charged with the production of the eliminated creatin. Mellanby[3] has taken exception to this explanation for the appearance of creatin post partum. The unstriated muscle, he maintains, contains no creatin; hence the uterus cannot furnish the product referred to. In fact, he has shown that when the uterus is removed after delivery, even more creatin may be excreted than when this muscular organ is left intact. On the other hand, evidence gathered by Mellanby from a metabolic study of parturient women on creatin-free diets indicates that the creatin excretion at this time has some relation to the mammary gland. There is a correspondence between increased mammary activity a few days after delivery and the development of milk from colostrum. If, owing to a toxemic condition, the activity of the breasts is delayed after childbirth, the creatin excretion is also delayed, and both develop synchronously in such cases. The early suppression of mammary-gland activity by the development of fever and mammary-gland abscesses is accompanied by the suppression of the creatin excretion. On the other hand, purgation and bandaging, which are employed to suppress mammary-gland activity, but do not act so effectively as illness, do not diminish the creatin excretion of the puerperium. This post-partum excretion of creatin is unlike that accompanying acidosis and lack of carbohydrates, for apparently lactose and glucose added to the diet do not suppress it.

From the facts now at hand Mellanby ventures the opinion that in the adult person the excretion of creatin is a general reaction indicating some abnormal condition affecting the transport of nutrient material, such, for instance, as that which must accompany the growth of the fetus or the development of milk secretion. Such a generalization might include the metabolic condition of carbohydrate deficiency in which, as already mentioned, creatinuria is present. The observations by Mendel and Rose on the excretion of creatin in all stages of childhood and adolescence suggest the association of creatin with the transport of material necessary for the growing tissues.

It is a striking fact brought out in a few cases by Mellanby that the best-milking mothers excreted the most creatin. Some evidence has been advanced by him that the puerperal excretion of creatin depends on the action of substances formed in the mammary gland itself. The relation of this hypothetical substance to the pyrexia commonly observed in women a few days after childbirth, and to the milk fever of cows, a condition for which the mammary glands are apparently responsible, will bear investigation. The point which we wish to emphasize is that the critical study of the urine by the most up-to-date methods of analysis has called attention to possible relationships and etiologies which no amount of mere casual inspection would suffice to disclose.

2. Shaffer, P. A.: Am. Jour. Physiol., 1908, xxiii, 1.
3. Mellanby, E.: The Metabolism of Lactating Women, Proc. Roy. Soc., London (B), 1913, lxxxvi, 88.

CONTAMINATED VEGETABLES

As water-supplies are more carefully inspected and their tendency to spread typhoid becomes less and less, the other factors in the dissemination of the disease are becoming better recognized. Among these one of the most important is the consumption of such vegetables as are placed on the table without cooking. As they can be washed only in cold water, and as frequently they may have been exposed to dust and dirt of various kinds, they are naturally capable of becoming carriers of disease under certain circumstances. The health departments of many cities now require, very properly, that such vegetables shall not be exposed openly for sale on the streets to be contaminated by street dirt and to be the resting-place of flies, but of course it is of no avail to safeguard them during sale if they have been contaminated previously. Their handling before they come to market and the conditions under which they have been grown are therefore extremely important.

Dr. J. D. Long[1] of the Public Health Service has called particular attention to the possibility of the dissemination of typhoid through the use of night-soil as a fertilizer. This would seem to be a distant and surely infrequent source of danger because of the deterrent feeling aroused by the thought of such a form of fertilizer, but, says Dr. Long: "In certain portions of the United States it is not uncommon to use sewage as it issues from the sewerage system of cities or towns for irrigation purposes, either by diverting it into a channel which leads through the garden, or by dipping it from polluted streams, vaults or vats, and applying it. In several communities, owners of large vegetable gardens collect night-soil, and furnish, clean and change the pails or receptacles, free of charge to the householder. In these instances the matter collected is usually mixed with the earth of the garden."

Among the Oriental peoples the custom of using night-soil as a fertilizer in vegetable gardens has obtained from time immemorial. Certain of the northern nations of Europe also have had this custom, and have brought it with them to this country. The truck farms near our

1. Long, J. D.: Contaminated Vegetables: the Use of Night-Soil in the Vegetable Garden as a Possible Disseminator of Diseases, Pub. Health Rep., March 28, 1913, p. 592.

large cities, especially in the East, are coming more and more into the hands of foreigners, some of them Syrians; while in the West the Chinese have invaded this branch of farming, and naturally bring with them the customs of the countries in which they have lived. Some of the oriental peoples of the Near-East, particularly the Greeks and the Armenians, in increasing numbers are growing and handling the fruits and vegetables of our larger cities.

Dr. Long says: "Owners and operators of vegetable gardens, in addition to saving carefully the excrement of themselves, their families and laborers, make periodic trips to the nearest market for the purpose of purchasing such additional material as may be needed. . . . In certain portions of the Orient it is a common thing to see a laborer walking between rows of young vegetables with a bamboo pole over his shoulder, from each end of which there hangs a sprinkling can. The streams from these cans are directed onto the tops of the young vegetables."

Typhoid bacilli may remain virulent on the leaves and stems of growing vegetables thirty days after the soil is infected, and the same germ has been found in the ground itself still active and virulent thirty-five days after it was infected. There are certain old impressions with regard to the purifying effect of natural conditions that need to be corrected. We have entirely given up the old maxim that running water purifies itself every three miles, for we know that specific disease-germs will live for days and weeks in running water. Ordinarily it was presumed that the growth of vegetables in sufficient sunlight to insure their vitality would definitely bring about the destruction of even virulent bacteria on them. This has been proved to be untrue. Rainfall or the watering process necessary for vegetable growth was supposed to be sufficiently cleansing to guarantee the healthfulness of fresh vegetables eaten uncooked, but when specific disease-germs are in question this is also not true.

As other affections, such as various forms of gastro-enteric disease, amebic dysentery and bacillary dysentery, may be transmitted in the same manner as typhoid through human excrement, it is evident that precautions should be taken against its use. The question is of much more wide-spread interest than might be imagined, for it is quite probable that the solution will also have to include some care with regard to other forms of fertilizer. While the excrement of the animals gives back to the soil, just as in the case of human beings, large amounts of readily available nitrogenous materials, these are mixed with matter that is extremely objectionable and often likely to be dangerous, particularly when derived from diseased animals. When the manure has been allowed to remain for a considerable period undergoing the chemical processes of decomposition, it is probable that most of the dangereous products in it are broken up.

CHLOROFORM AND ETHER

Despite the controversy maintained so many years with respect to the comparative advantages of chloroform and ether as anesthetics — a controversy apparently supported by the varying impressions of experimentalists and practitioners — the belief has become quite firmly established, in this country at any rate, that chloroform harbors certain elements of danger not exhibited by ether. These consist in irregularities of the heart-beat which may early manifest themselves, even before the content of chloroform in the blood is sufficient to maintain a deep narcosis, the heart's action may be weakened. An accompanying relaxation of the vasomotors may help to bring about an imperfect circulation leading to a collapse of the patient during the narcosis. More serious than this, however, is another untoward feature of the undue administration of chloroform. A sudden failure of the heart may ensue when an excessive quantity of the anesthetic reaches the blood at once. It is in this respect that the danger of ether is far less marked; that is, the range of dosage between the amount sufficient to induce narcosis and the quantity which will evoke the dangerous failure of the heart is far larger in the case of ether than in that of chloroform. For example, it has been found that the cessation of the heart-beat occurred with a content of 0.058 per cent. of chloroform in the blood of the ventricle. Inasmuch as from 0.035 to 0.05 per cent. of chloroform is found in the blood in conditions of deep narcosis before the stage of heart failure,[1] it will be noted how slight is the zone of safety between the efficient concentration of chloroform in the blood and the danger limit. This is not true in the same way of ether, and the practical consequences of the differences in this behavior of the two anesthetics are obvious.

Although as long ago as 1848 Snow maintained that ether produced more efficient anesthesia than a quantity of chloroform which produced an equal degree of narcosis, and that chloroform is from eight to ten times more toxic than ether, the problem of relative merits has been reiterated again and again. This is, perhaps, due to the fact that in comparison with chloroform, ether has received little attention from pharmacologists; as one writer expressed it, the ether research has usually been a small appendage to a research on chloroform.[2] The Hyderabad Commission, in 1893, concluded that ether produced the same bad effect as chloroform; and Cushny had expressed the opinion that the effects of chloroform and ether differed mainly in degree.

The opinion of most observers that ether is distinctly less dangerous than chloroform is substantiated by recent observations of Githens and Meltzer[3] conducted by a new method at the Rockefeller Institute for Medical Research. They have studied the toxic effects of the two anesthetics

1. Nicloux, M.: Les anesthésiques généraux, Paris, 1908, p. 27.
2. Embley, E. H.: The Action of Ether on the Circulation, Biochem. Jour., 1910, v, 79.
3. Githens, T. S., and Meltzer, S. J.: Differences in the Toxic Effects of Ether and Chloroform, as Observed Under Intratracheal Insufflation, Jour. Pharmacol., 1913, iv, 355.

when administered by the method of intratracheal insufflation introduced by Dr. Meltzer. By this procedure one of the dangerous effects of ether and chloroform is eliminated, namely, that resulting from a partial or complete paralysis of the respiratory function; for the respiration is artificially conducted. The intratracheal insufflation does not necessarily cause apnea, for the spontaneous respiratory movements of the individual may still be detected. The outcome of the study of the anesthetics under such conditions was distinctive. When ether is used, a certain dose may be administered which is amply sufficient to keep the animal completely anesthetized, while respiration and blood-pressure may remain practically unimpaired for several hours. When this anesthetic dose is exceeded, the first striking effect is on the spontaneous respiration, which may be abolished. At this stage blood-pressure is not impaired. With the continuance of the higher dosage the blood-pressure begins to fall, very gradually and slowly. The dangerous level may not be reached for several hours. Even at this stage, when the ether is turned off, the pressure may begin to rise at once, although some time has to pass before the respiration returns, and there is still another interval before reflexes and consciousness return. Only a partial reduction of the ether intake may suffice to permit a return to the degree of blood-pressure which is sufficient to obviate danger.

The ready abolition of the respiration by ether is a practically important phenomenon. It may serve as an indication that the etherization has entered the toxic zone. As Githens and Meltzer add, it is a danger signal; and since hours may pass before the real danger will be arrived at, it is a safe and very valuable signal.

The results with chloroform were quite different and in line with what has been intimated before. In doses which are undoubtedly in excess of the anesthetic dose, respiration and blood-pressure go down practically together, and this in a comparatively short time. When the administered dose is only slightly in excess of the reliably anesthetic dose, the impairment of respiration does not set in so early as under ether intoxication; but when this sets in, blood-pressure begins to fall also, although the respiration may in some cases cease fifteen or twenty minutes before the fall of blood-pressure reaches the danger point. Respiration perhaps resists chloroform intoxication slightly longer than that of ether, while blood-pressure is affected much more rapidly and profoundly by chloroform than by ether.

These findings correspond in their practical bearings with the conclusions of Embley, who maintained that primary paralysis of heart muscle from overdose of ether does not occur in ether anesthesia; when heart-failure occurs it is secondary to failure of respiration. If it is true, then, that ether is in every way much safer than chloroform, one trenchant reason now is that, in the case of chloroform, the zone separating safe anesthesia and danger is narrow, and there is no reliable danger sign.

THE GASTRIC SECRETIN

With the introduction of the hormone theory of the stimulation of digestive glands and other organs to physiologic activity, attention was quickly directed to the determination of where and how this explanation of the maintenance of important functions could be applied. The classic illustration was, of course, the initiation of pancreatic secretion through the absorption of secretin elaborated in the wall of the duodenum by the hydrochloric acid coming in contact with the intestinal mucosa after the discharge of gastric contents through the pylorus. Acting on the suggestions contained in this discovery, Edkins has carried out experiments to see whether such a chemical mechanism, in distinction from the nervous control which is usually called on to elucidate the phenomena of secretion, may not also serve to explain the secretion of gastric juice when food is introduced into the stomach. He finds that substances such as peptone, broths, dextrin, etc., which are known to induce gastric secretion when ingested, are without influence on the secretory act if they are injected directly into the blood-stream. But when such known excitants of secretion are allowed to stay in contact with the pyloric mucous membrane and a decoction of this is then injected into the circulation, a secretion of both acid and peptic enzyme into the stomach ensues. Infusions of the cardiac portion of the stomach or of other organs do not act in this secretion-producing manner. Edkins concludes that this typical secretion of gastric juice is determined by a chemical mechanism; the first products of digestion act on the pyloric mucous membrane, in which they produce a substance which, entering the blood-stream, is carried to the gland-cells of the stomach where it acts as a specific excitant of their secretory activity. This is the gastric hormone — gastric secretin.

The problem of the existence of such a specific chemical "secretagogue" has been pursued in the laboratories of the Academy of Sciences in St. Petersburg under the inspiration of the remarkable experimental technic which Pawlow has developed. The skill with which sequestered accessory stomachs and their connected fistulas are constructed surgically for the independent observation of what takes place in the major parts of the stomach; the side-tracking of usual paths of digestive progress; the purposeful diversion of the food-masses into new or unusual by-ways — all of these operative interferences conducted with due regard for the integrity of the nervous and muscular and circulatory mechanisms of the alimentary apparatus always remain a marvel to the inexpert and uninitiated. By such artistic methods whereby substances can be introduced into the pyloric portions of the stomach while the effects on secretion can be observed in an independent and disconnected part of the same organ, Sawitch and Zeliony[1] have established the essential accuracy of Edkins' contentions. Extract

1. Sawitch, W., and Zeliony, G.: Zur Physiologie des Pylorus, Arch. f. d. ges. Physiol., 1913, cl, 128.

of meat, for example, brought into direct contact with the pyloric mucosa, provokes a marked flow of gastric secretion in the fundus of the stomach. This is, of course, quite independent of sight, smell or taste of the food product. Sodium bicarbonate, the possible efficiency of which as a secretory excitant in the stomach has been so much debated, also provokes a similar indirect secretion of acid gastric juice. Even distilled water is found to be not inert. It seems certain, then, that the production of gastric juice in the fundus glands can be excited through the mucosa of the pylorus region by various substances which are known as secretory excitants; and this effect can be brought about by direct contact in the stomach, without stimulation of the mouth accessory parts or the sensory organs.

These facts add to the growing conviction that normal gastric secretion is due to the cooperation of at least two factors. The primary one is the nervous secretion induced by the stimulation of the mucosa of the mouth or by the awakening of the appetite through psychic channels. The second factor is chemical. It depends on the elaboration of a hormone which acts as a chemical messenger to all parts of the stomach through humoral paths, and whose effects linger long after the psychic secretion has faded out.

ARTICLES ON VACCINE THERAPY

Bacteriology was unknown, or at least in its beginnings, at the time when many physicians now in active practice received their medical training. Yet since that time, and based on that science, there has been a greater development in medicine and in surgery than was achieved in all the years preceding. As a result of the development of bacteriology, serum therapy was established, and finally Wright—less than a decade ago—inaugurated a method of treating infectious diseases by bacterial vaccines. When this new treatment was introduced, special skill was considered necessary on the part of those who used it; the worker had to be trained to recognize the different varieties of bacteria, to isolate them in pure culture and to know how to obtain the opsonic index. In a word, the treatment required a worker skilled in bacteriology with an unusual laboratory equipment. Now, however, physicians without special training are applying this treatment; no longer, it would seem, are these requirements of skill and experience regarded as necessary. Why?

The new method of treatment found the great majority of physicians without that particular training necessary to apply it properly. Laboratory workers, however, clinicians in hospitals, and here and there the thoroughly prepared man in active practice, were publishing reports of successful results from the use of vaccines—usually autogenous and made by the man who treated the patients. Physicians generally began to realize that it was their duty to give their patients the benefit of this new application of science to therapeutics. At the same time they realized their inability, through lack of laboratory training and knowledge of bacteriology, to meet the demand. They appreciated that this treatment depended, first, on a correct diagnosis—not as to the particular disease, but as to the causative agent—the particular organism; and second, on the knowledge and skill required to prepare the vaccines. How to compensate for their deficiency in this special knowledge was the problem before practitioners. This deficiency was almost unavoidable, for it meant practically a new science to be learned.

Here the manufacturer sprang to the rescue. He first engaged to take from the physician the labor of making the vaccines, and the stock vaccines were placed on the market. So far, so good; but this satisfied only one requirement—supplying the remedy. The next was the supplying of the diagnosis. Commercial acumen again came to the rescue and introduced, not corresponding stock vaccine—that is, one that would apply to the particular causative organism—but two or three combined, so that good guesswork would be sufficient rather than correct diagnosis. This one false step being taken, *facilis descensus Averni*. If it was a good thing to have two or three different varieties, then it would be still better to have twice this number; so to-day we have mixtures containing as many as seven or eight, and in one instance ten different varieties of dead bacteria. Of course, such mixtures relieved the physician from the necessity not merely of making an exact diagnosis, but, in fact, of making any diagnosis whatever. Not only is it no longer necessary to take the opsonic index, but even the microscope may now be laid aside, and the diagnostic culture ignored, for surely one of the many ingredients of these mixtures will fit the case! If the old shotgun nostrum was regarded as unscientific and discreditable to our profession, what shall we say of the new shotgun mixture? From the point of view of true scientific therapy, there is absolutely no excuse for mixed vaccines, and the reason for their existence rests, first, on the fact that many physicians are not able to make correct diagnoses and apply the particular vaccine, and, second, on the fact that vaccine therapy has been subordinated to commercialism. In thus abdicating his office as a scientific diagnostician, the physician is descending from the position of a skilled specialist to become the purveyor of ready-prepared remedies under the advice of commercial houses.

At the time these commercial vaccines were being introduced, the Council on Pharmacy and Chemistry undertook to investigate and pass on these products, as it was doing with proprietary medicines. The Council soon realized that the problem was a serious one. Therefore, a little over a year ago, it appointed a special committee to consider the subject. This committee reported at the recent annual meeting of the Council and recommended, among other things, that in the future no

V. 6
1913

mixed vaccines should be accepted, unless there was a special reason for a particular combination. This recommendation was adopted. There was also another: that a special committee be appointed to prepare a series of articles to be published in THE JOURNAL, in which the problems connected with this new therapeutic movement should be discussed. The first instalment of the series appears in this issue.

Let us repeat that the recent developments in vaccine therapy are unscientific and discreditable; that it is time for each individual physician to give the matter serious consideration and to realize his responsibility. There is no doubt that this new therapy, if scientifically applied, is of real service, and marks an advance; but future development of the method depends on its scientific application, and its deliverance from commercial thraldom.

GLUCOSE WINS

We have at different times[1] given our readers the facts regarding the attempt of the "glucose trust" to render null and void the Wisconsin state law which prohibits the sale of glucose under the euphemistic misnomer, "corn syrup." Beaten at every point in the state courts the trust finally carried the case to the United States Supreme Court. This tribunal has within the past few days handed down a decision in the case favorable to the glucose trust. Briefly, the facts are as follows: Several cans of a product consisting of a mixture of glucose with a small amount of cane syrup were shipped from Illinois to a retail grocer in Wisconsin. This glucose mixture was labeled "Karo Corn Syrup" and also "10 per cent. cane syrup, 90 per cent. corn syrup." This labeling violated the Wisconsin law, which prohibits the use of the term "corn syrup" as a synonym for glucose. The retailer of this mixture was prosecuted under the state law and found guilty. The case was appealed to the state supreme court, which affirmed the conviction of the lower court. Then the case was carried to the United States Supreme Court.

The result of this federal decision is far-reaching. It means, apparently, that no state may pass, for the protection of its citizens, food and drug laws that are more stringent than the federal law covering the same ground—at least so far as the law may affect articles that are sold direct by the importer to the public.

The decision seems to bring about some curious anomalies. For instance, as the law now stands it is presumably:

1. *Legal* for a retail grocer in Wisconsin to sell his customers a product made in another state that is mislabeled according to the Wisconsin law, provided he imports the product himself and provided that the labeling does not conflict with the federal law.

2. *Illegal*, however, for him to sell the same product, labeled in the same way, if he has purchased it from a jobber in his own state.

3. *Illegal* for him to sell a product mislabeled according to the Wisconsin law, but correctly labeled according to the federal law, if the stuff is manufactured within his own state.

Apparently, then, the Supreme Court's decision will discourage the founding of any state industries in food and drugs in those states whose food and drug laws are more stringent than the federal law. Furthermore, it seems to deliver a body blow to the jobbers of those states having stringent laws. The Supreme Court's objection to the Wisconsin law in this matter seems to be that the state forbids the use of any label on the product except that which it prescribes. Should the Wisconsin law be so amended as to permit it,* a can of glucose, without conflict with the Supreme Court's decision, may be labeled on one side "Corn Syrup"—thus complying with the federal law—and on the other side "Glucose," in accordance with the state law. As the matter now stands, the people of Wisconsin may have glucose foisted on them under any fancy name the glucose trust sees fit to use, provided the Wisconsin retailer imports the stuff direct instead of through his jobber.

1. Where Glucose is Not Corn Syrup, editorial, THE JOURNAL, July 2, 1910, p. 33; Will the Wisconsin Pure Food Law be Emasculated? editorial THE JOURNAL, Nov. 26, 1910, p. 1897; The Wisconsin Pure Food Law Not Emasculated, editorial, THE JOURNAL, May 20, 1911, p. 1483.

Current Comment

WATER-CORE GOLF-BALLS

Even our most innocent recreations seem hedged about with unseen dangers. Elsewhere in this issue will be found the case history of a boy who lost the sight of his right eye as the result of cutting into a golf-ball. This report is by no means the first one of its kind; indeed, there have been many both here and abroad, and attention has been called to the unwisdom of dissecting *any* golf-ball lest it prove to be one of the "water-core" variety. As a rule the centers of these balls are formed by a rubber bag containing various heavy fluids, almost all of which are highly caustic. Analyses of the contents in a number of reported cases have disclosed hydrochloric acid, solutions of zinc chlorid, caustic soda and other dangerous cauterants. These burning liquids and their rubber container are tightly covered by machine-wound ribbons or other material, and are thereby subjected to great pressure. It follows that when burst or cut open the fluid contents are expelled with explosive force, generally into the face of the dissector or some innocent onlooker. Recently the United States Golf Association took up the matter and issued this warning: "Owing to the fact that serious accidents have occurred in the past few years due to cutting open certain makes of golf-balls containing acid and other sight-destroying compounds, the association warns all persons to refrain from this dangerous practice." Whether or not the resiliency or "carrying power" of golf-balls is enhanced by furnishing them with some sort of fluid core may be left to

the proper authorities to decide; but it is our duty both as good (?) golfers and as practical sanitarians to warn the public of the dangerous character of some golf-balls, and to let them know that it is the part of wisdom not to invite disaster by dissecting any.

THE SOPHISTICATION OF "SOFT" DRINKS

The near advent of the warm season with its attendant thirst, coupled with the great American habit of consuming large quantities of soda-water and other "soft" drinks, has prompted the New York City and Montana boards of health in recent bulletins to deal with this subject. The Montana bulletin contains an article giving a long list of bottled, carbonated beverages which were found either adulterated or misbranded when examined in the state laboratory. Most of them contained saccharin; samples of "ginger ale" contained capsicum but no ginger, and the fruit beverages all contained artificial flavors and colors which were not declared on the label. It is also stated that since saccharin does not aid foaming as does sugar the manufacturers are in the habit of using extract of soap-bark, which produces a good foam. Not only is this substance deceptive, but also the soap-bark contains a toxic principle, sapotoxin, which is markedly poisonous. The bulletin of the New York City Department of Health sets forth a regulation prohibiting the use of soap-bark in beverages and in fillings used by bakers. Violations of this regulation will be criminally prosecuted. The prevailing habit of consuming large quantities of bottled, carbonated beverages in hot weather is undoubtedly productive of much harm. The knowledge that poisonous chemicals are among the ingredients should discourage their use. Probably neither the conscience of the manufacturers nor statutory or health board regulations will entirely prevent the sophistication of these "soft" drinks.

DANGER IN TONIC SUMMER DRINKS

In addition to the drinks containing saccharin, saponin and chemical flavoring and coloring substances, there are other "temperance" drinks equally dangerous, especially for the children and young persons who indulge in them so freely. Many of the rather misnamed "tonic" drinks that are so widely advertised have been shown by the United States government analyses to contain considerable proportions of caffein. It is easy to understand that after taking these caffein-containing cold drinks the feeling of fatigue may drop from one. Caffein is not, however, a desirable stimulant to serve indiscriminately to growing children or young adults, especially those city dwellers whose nervous systems certainly need no artificial stimulation. Besides, caffein seems to have a definite tendency to the formation of a habit. Not a little of the restlessness of children during the summer is to be attributed to the taking of caffein in considerable quantities in the form of these soda-fountain drinks. The parents sometimes discover that a distinct craving for the particular drink has been created and that the child pleads for money to satisfy that craving. After reading the advertisements of the marvelous tonic and stimulating virtues and fatigue-dissipeting qualities of these preparations, the parents feel sure that there cannot be any harm in such well-recommended beverages, especially since they are sold in a favorite drug-store. Unfortunately, this confidence is not justified; it is necessary to draw a sharp line between bottled tonics or drinks containing caffein and the relatively harmless carbonated soda-water of the soda-fountain, when served plain or with wholesome flavoring matter.

"KUR" AND "CURE"

Many newspapers are hasty or careless in announcing the discovery in Germany of some method of treatment more or less new, and not infrequently misinformation is given the public through failure to keep in mind the actual meaning of one little word. The German word *Kur* does not mean "cure," although it is not an uncommon thing to find it so translated into English. "To cure" in English means "to restore to health; to effect a cure"; but in other languages it means merely to apply "a method of remedial treatment of disease; medical or hygienic care; method of medical treatment." The German word for "restoration to health" is *Heilung*, not *Kur*. The Latin word *cura* means merely "care," a shade of meaning which is preserved in the derived term "curator." An Italian physician was recently made to say, when his article was translated into English, "I cured ten typhoid patients last month and six of them died." What he really said was that he had treated ten patients.

THE NEW OWEN BILL

Senator Owen has introduced a revised bill providing for a national Department of Health; the text of this Senate Bill No. 1 appears in this issue.[1] In discussing the tie vote by which the Senate of the Sixty-Second Congress declined to consider the Owen bill at that time, THE JOURNAL stated[2] that it was generally understood that Senator Owen would redraft and modify his bill and would introduce it at the next session of Congress. The hope was also expressed that the new bill would go back to the original plan and provide for a Department of Health with a secretary in the cabinet. The new bill follows the general plan of organization provided in the former bill, but creates a Department of Health and provides for a Secretary of Health. The present bill is by far the best measure which has yet been presented on this subject. It contains all of the strong points of preceding bills without any of the objections to which previous bills were subject. The return to a plan for a Department of Health is commendable. In the United States Public Health Service we already have a strong, efficient and rapidly developing bureau. In order to justify itself to the friends of advanced health legislation, any proposed change must provide for something larger, better and stronger than the existing health machinery. The movement for a department has gained strength enormously during the past three years. The opposition to it has crystallized in a constantly diminishing group of

1. Medical Economics Department, this issue.
2. Senate Declines to Consider Owen Bill, editorial, Feb. 8, 1913, p. 453.

V. 6
1913

objectors, while public support for such a measure has been growing as its object and purposes have been better understood. The silly objections which were at first raised against the measure have been completely met. The establishment of a national Department of Health will not and cannot create a "medical trust." It cannot interfere with the rights of any citizen or with the authority of any state. It cannot have anything to do with the individual treatment of disease or with the administration of drugs. These facts have been proved repeatedly to the satisfaction of all those who really wish to know the truth. The only objectors left are those who are too ignorant to be able to understand, too fanatical to desire to understand or too mercenary to care for anything except the possibility of interference with their private gains. The educational value of the efforts that have been made in the past are well worth the cost. The prospects for the passage of Senator Owen's bill are more favorable now than ever before.

Medical News

ILLINOIS

Personal.—Dr. Arthur Parsons has been elected mayor of Geneseo.——Dr. James Parkhurst, Grand Detour, who has been ill with pneumonia, is improving.——During the recent floods on the Ohio River, Dr. J. C. Westervelt, Shelbyville, represented the State Board of Health at Shawneetown and Dr. Charles J. Boswell, Cairo, and Dr. Charles E. Crawford, Rockford, at Cairo.

Vote for County Sanatorium.—At the city election in Rockford, April 15, advantage was taken of the Glackin act of 1908-9 and a vote was taken "for the levy of a tax for a public tuberculosis sanatorium." As the result of an active campaign by the Winnebago County Antituberculosis Association, this proposition passed by a substantial majority and Winnebago County will have in the near future a free antituberculosis sanatorium.

INDIANA

Death of Dr. Daugherty.—Dr. C. A. Daugherty, South Bend, Trustee of the American Medical Association, died April 23. A further notice will appear next week.

KENTUCKY

Personal.—Dr. R. Linsey Ireland has been elected president and Drs. Henry Enos Tuley and R. R. Elmore, vice-presidents, of the Louisville Automobile Club.——Dr. W. C. Caywood, Winchester, has been elected physician at the Frankfort Reformatory, vice Dr. E. H. Maggard, resigned.

Flood Notes.—The Louisville board of public safety will give antityphoid inoculation free to all who wish it.——On the recommendation of Dr. W. W. Richmond, Clinton, a member of the state board of health and Major Lyster, M. C., U. S. Army, the boards of health of Hickman and Fulton County are said to have issued orders for the compulsory typhoid vaccination of everyone in the county.——Surgeon Leslie L. Lumsden, U. S. P. H. S., spoke at a special meeting of the Maysville and Mason county boards of health and of the city council of Maysville, on the best method of cleaning up after a flood. Dr. Lumsden went from Maysville to Catlettsburg.——The steamer *Edward Meyer* left Louisville, April 9, in charge of Major James A. Logan, U. S. Army, to visit and inspect the cities and towns affected by the flood. Major Paul C. Hutton, M. C., U. S. A., was in medical charge of the expedition and was accompanied by Dr. W. L. Heizer, Bowling Green, representing the Kentucky State Board of Health, and representatives of the state boards of health of Indiana and Illinois and other physicians, all of whom worked in conjunction with the local boards of health of the various towns visited.——A bulletin has been issued by the State Board of Health appealing to public sentiment for "an organized, systematic and thorough clean-up campaign, the free liming and whitewashing of all recent overflooded premises and the boiling of all suspicious drinking-water."

LOUISIANA

New Railroad Hospital Opened.—The new Illinois Central Railroad Hospital, New Orleans, was formally opened to receive patients, March 7. This hospital will care for the sick and injured employees of the system in the New Orleans district.

Jubilee of Polyclinic.—The twenty-fifth anniversary of the New Orleans Polyclinic, the postgraduate medical department of Tulane University, was celebrated with impressive ceremonies, April 7. Dr. Charles L. Chassaignac, the dean, told of the progress made in the institution since its first session in 1888. Other speakers of the evening were Drs. Isadore Dyer and H. Dixon Bruns. Dr. Rudolph Matas gave an interesting history of the polyclinic.

State Board Has Full Authority.—On April 16, for the second time, the State Board of Health of Louisiana was vindicated for the position it has assumed that it was the supreme and final health power and arbiter in the state. The Supreme Court, in the case of the State Board of Health versus Adolph Susslin, in which the board sought to enjoin an Algiers baker from operating a plant alleged to be in a highly unsanitary condition, reinstated the decree rendered by it last December after a full rehearing of the case. The court holds that neither the city of New Orleans nor the Board of Health of the City of New Orleans has exclusive jurisdiction in health, sanitary and hygienic matters in the city, and that the State Board of Health not only is not excluded from acting within the parish of Orleans, but has supervisory powers throughout the whole state including the parish of Orleans, and may remedy and suppress conditions detrimental to the public health, notwithstanding the existence of a local board of health.

MARYLAND

New Officers.—Cecil County Medical Society, April 18: president, Dr. Ernest Rowland, Liberty Grove; secretary-treasurer, Dr. Howard Bratton, Elkton.

Widows' Home Election.—The board of managers of the Home for Widows and Orphans of Physicians elected the following officers at its annual meeting: president, Mrs. Eugene F. Cordell; vice-presidents, Mrs. J. F. H. Gorsuch and Mrs. Louis A. Griffith; recording secretary, Mrs. Salvatore De Marco; corresponding secretary, Mrs. Johannes Mattern, and treasurer, Dr. Eugene F. Cordell.

Hospital News.—Work has been commenced on the Allegany County Tuberculosis Hospital to be erected on a seventy-five acre tract of the Land estate on the east side of Haystack Mountain, opposite Mount Hebo. The building will be ready for occupancy this summer.——A committee has been appointed by the Berlin Board of Trade to look into a site for a hospital for the town. The committee has reported in favor of the Stokes farm, a mile and one-half south of Berlin. The site can be purchased for $5,000 and the cost of the necessary alterations will be about $3,000.

Baltimore

Fletcher's Portrait Presented.—At the meeting of the Johns Hopkins Hospital Historical Club, April 14, Dr. Fielding H. Garrison, Washington, presented to the college a portrait of the late Dr. Robert Fletcher of the Surgeon-General's Library, Washington, D. C.

Psychiatric Clinic Opened.—The event of the week in Baltimore was the opening of the Henry Phipps Psychiatric Clinic, April 16-18. Mr. Phipps, his wife and three sons were present and a dinner was given in his honor on April 16 to express the appreciation of the community for his gift. At this dinner Dr. William H. Welch was toastmaster, Governor Goldsborough and the mayor of Baltimore were among the speakers. Sir William Osler was one of the guests. On April 16, the chief address of the occasion was delivered by Sir William Osler on "Specialism in the General Hospital." Dr. Henry M. Hurd spoke on "What the Henry Phipps Psychiatric Clinic Means." It is an attempt to apply the methods and conditions in which acute diseases are treated in a general hospital to the care and treatment of insanity. He believes that the utilization of the clinic for the instruction of medical students and of physicians generally in the diagnosis and treatment of insanity will be of great service to the country at large. The patients in the clinic will be classified as follows: on the first floor, more or less violent patients will be received, and on this floor not more than eight patients will be taken in a ward. The second floor will be known as the semi-quiet section. Here patients will be transferred when they begin to improve. On the third floor patients who are quiet, either on admission or

after their stay has brought them to this condition, will be accommodated. On the fourth floor quiet private patients will be placed and the fifth floor is divided into suites of two rooms and a bath, for private patients.

NEW YORK

Personal.—Dr. Herbert Upham Williams, dean and professor of pathology of the University of Buffalo medical department, has been appointed examiner in bacteriology on the State Board of Medical Examiners, vice Dr. Hiss, deceased.——Dr. Katherine L. Daly, Rochester, has been appointed special lecturer by the State Department of Health.

Skim Milk Must Be Labeled.—The Court of Appeals of Albany has upheld the constitutionality of the law which prescribes a penalty for shipping skim milk from the state to another unless it is plainly marked, and in doing so upheld the recovery of $16,800 in penalties from a dealer in New York City, though the milk was for consumption in New Jersey.

Oppose Hospital Site.—The New York Merchants' Association has asked Governor Sulzer to instruct the state authorities to withhold approval of the plans of the proposed Mohansic State Hospital for the Insane and for the New York Training School for Boys which were to have been erected in Westchester County. It is requested that this action be taken pending the passage of a bill prohibiting the establishment of similar institutions within the Croton and Catskill water-sheds from which New York City receives its water supply. Several plans for establishing tuberculosis sanitariums within this area have recently been sidetracked.

Clean-Up Suggestions.—The *Monthly Bulletin* of the State Department of Health states that the time has now arrived to urge those who are slothful and negligent, or inclined to be so, to wake up and place their surroundings in as sanitary a condition as possible before the warmer weather permits the flies and other insects to increase and multiply to spread the germs of typhoid and other diseases broadcast. The following "Fly Aphorisms" culled from various sources are presented:

"It is better to screen the cradle and wear a smile than scoff at the precaution and wear mourning."
"Flies in the dining-room usually precede nurses in the sick room."
"Screens in the windows prevent crape on the door."
"Flies, as well as bad water, spread typhoid."
"A fly in the milk may mean a member of a family in the grave."
"A fly has natural enemies; the most persistent and most effective should be mine."
"It costs less to buy a screen door than to get sick and lay off for a month."
"It's a short haul from the garbage can to the dining-table via the fly route."
"If at first you don't succeed, swat, swat, again."

New York City

Resolutions Regarding Dr. Bristow.—The New York Academy of Medicine adopted resolutions regarding the death of Dr. Algernon Thomas Bristow, setting forth its sorrow at the death of Dr. Bristow and its appreciation of him as a man and a physician.

Small-Pox on Cunarder.—The Cunard steamer *Pannonia*, from Trieste and Naples, on her arrival at this port reported an outbreak of small-pox among the steerage passengers. After complete fumigation, 111 passengers were left at Hoffman's Island for further observation.

Personal.—Dr. John H. Carroll has been appointed examining physician to the Municipal City Service Commission.——Dr. William S. Applegate, Flatbush, was given a farewell dinner by the Flatbush Medical Society of which he is president, April 10, to mark his retirement from active practice.——Dr. Lewis Stephen Pilcher, Brooklyn, has been appointed examiner in diagnosis of the State Board of Medical Examiners in place of Dr. Glentworth R. Butler, resigned.

No Island Hospital for the Bronx.—At a recent meeting of the Board of Estimate it was decided to abandon the project of building a hospital for contagious diseases for the Bronx on North Brothers Island. The Bronx favored the island site instead of one on the mainland but it was pointed out that the other boroughs made no objections to such hospitals. Commissioner Lederle was instructed to look over certain sites in the Bronx that had been suggested as appropriate for this purpose.

The Hall of Health.—At a meeting in the Museum of Natural History, April 16, a new institution in the life of this city was opened. This is to be known as the Public Hall of Health. The audience numbered more than 1,000 persons and received with enthusiasm the announcement that this was the second stage of the campaign in educating the people as to the value of the clean-up movement that has been initiated by the Department of Health. The Health Commissioner emphasized the point that the most efficient health department and street cleaning department in the world could not effectually clean up New York and keep it clean without the cooperation of the people. The Hall of Health hopes to accomplish four things: First, to get the city physically clean; second, to make a decided reduction in the death-rate of the city; third, to educate the public so that they will never again let the city get dirty as it is now; fourth, to establish, eventually, by changes in the present regulations and perhaps by cooperation with permanent citizens' organizations a permanent clean-up organization. A lantern-slide exhibition was given showing the filthy conditions actually found by the Health Department throughout the city by its inspectors. The Hall of Health contains instructive exhibits showing the relation of filth and insects to the spread of disease.

PENNSYLVANIA

School Children Afflicted.—Results just compiled show that medical inspection was badly needed in the public schools of Altoona. Investigation shows that out of 7,277 examined, 4,823 were recommended for some form of medical treatment, but the general defect discovered was decayed teeth, 3,107 being afflicted. Six hundred and thirty-eight had more than three decayed teeth each. Enlarged tonsils totaled 1,735. Eye-strain, 750. Not a single case of tuberculosis was found.

Hospital News.—The new addition to the York Hospital erected at a cost of $25,000 will be opened to the public about May 1. The addition will greatly increase the capacity of the institution.——At the annual meeting of the trustees of the Passavant Memorial Home for the Care of Epileptics, Rochester, plans were made for furnishing the newly-erected building for the shelter of male epileptics. The new building cost $25,000 and will accommodate fifty patients. There are now seventy-three inmates of whom forty-three are women.

Philadelphia

Personal.—Dr. Theobold Smith, Harvard University, delivered an address to the Pathological Society, April 24, on "An Attempt to Interpret Present-Day Uses of Vaccines."——Dr. Ernest La Place has recovered from a serious illness with septicemia caused by a scratch received while operating.

Old Hospital Demolished.—On April 14 the demolition of the building on the northwest corner of Twelfth and Washington Streets was started. This building was originally used as the City Hospital and the ground extending west for two squares was used as the Potter's field. From 1831 until 1833 the building was used as an isolation hospital for the treatment of contagious diseases.

Leidy Memorial Meeting.—The first meeting under the Dr Joseph Leidy memorial foundation was held in Houston Hall of the University of Pennsylvania, April 17. This foundation has been established in memory of the former professor of anatomy by his nephew, Joseph Leidy, Jr. Addresses were made by Dr. Edmund Beecher Wilson of Columbia University, and Dr. Charles Sedgwick Minot of Harvard University. The gift for the foundation will be used for a series of scientific lectures by specialists.

Waiters Must Be Healthy.—Precautions against the transmission of communicable diseases by its dining-car and restaurant employees will be hereafter rigidly observed by the Pennsylvania Railroad. The following announcement was made by the management April 18: "There is to be a quarterly physical examination of every employee who has anything to do with the preparation or serving of food. Dishwashers, kitchen helpers, cooks and waiters must undergo an examination every three months, and only a 100 per cent. report on their physical condition will permit their remaining in the service. While those suffering from tuberculosis, diseases of the eye or skin, and any other communicable disease, may not be employed in any capacity where they might come in contact with food, further precaution will be taken in debarring them from employment in places where linens and tableware are kept."

Alumni Meeting.—The annual meeting and banquet of the alumni association of the medical department of the University of Pennsylvania was held in the Bellevue-Stratford, April 18. Dr. William Pepper, dean of the medical school, was toastmaster and addresses were made by Edgar F. Smith, provost of the University, Dr. Richard C. Cabot, Boston, Dr. Lewis H. Taylor, Washington, D. C., and Dr. John G. Clark. The following officers were elected: president, Dr. John B. Deaver; vice-presidents, Drs. John K. Mitchell, Richard C. Norris, S.

V. 6
1913

M. Hamill, Lewis H. Taylor, Casper W. Sharples, Walter R. Weiser and Alexander R. Craig; historian, Dr. William Pepper; secretary and treasurer, Dr. G. Morris Piersol; and executive committee, Drs. James Tyson, George E. de Schweinitz, George C. Stout, Allen J. Smith, Charles W. Burr, Lewis H. Adler, Jr., George G. Ross, B. A. Thomas, Fred H. Klaer and Henry P. Brown, Jr.

GENERAL

Physicians of Southwest to Meet.—The annual meeting of the Medical Association of the Southwest will be held in Kansas City, October 7-8.

Military Surgeons to Meet in Denver.—The twenty-second annual meeting of the Association of Military Surgeons of the United States will be held in Denver, September 16-19.

Alienists to Meet.—A meeting of the alienists and neurologists of the United States will be held in Chicago, June 24-27. Dr. W. T. Mefford, 2159 W. Madison Street, Chicago, is in charge of the executive details.

Meeting of Health Board Officers.—The annual Conference of State and Provincial Boards of Health of North America will begin its session in St. Paul, Friday, June 13, under the presidency of Dr. W. F. Snow, Sacramento, Cal. In all probability, some of the sessions will be held on the campus of the university in Minneapolis.

Canal Zone Notes.—At the annual meeting of the Medical Association of the Isthmian Canal Zone held in Ancon, March 15, Dr. W. M. James was elected president; Dr. Lewis B. Bates, vice-president, and Dr. D. F. Reeder, secretary-treasurer, all of Ancon. On March 29 there was a special meeting of the association at which a delegation of members of the United States Clinical Surgery Society was entertained.——Drs. H. A. Greenwood, Ancon, and R. F. Cliff, Panama City, of the Colon Hospital staff, have resigned, the first to accept a position with the Guayaquil and Quito Railroad, Ecuador, and the second to enter private practice in the United States.

Antituberculosis Association.—The ninth annual meeting of the National Association for the Study and Prevention of Tuberculosis will be held in the New Willard Hotel, Washington, D. C., May 8-9, under the presidency of Homer Folks, LL.D., New York. At the meeting of the advisory council on the first evening, the subject for discussion is, "The Antituberculosis Movement and Its Relation to the Campaign Against Other Preventable Diseases," and at this session the committee on hospitals for advanced cases will make its report. On the morning of May 9, there will be a joint session of the Clinical and Sociologic sections at which there will be a symposium on "The Tuberculosis Problem from the Sociologic and Medical Points of View."

Physicians and Surgeons Congress.—The preliminary program of the ninth meeting of the Congress of American Physicians and Surgeons to be held in Washington, D. C., May 6-7, under the presidency of Col. William C. Gorgas, M. C., U. S. Army, announces that on the afternoon of the first day the subject for consideration will be "The Study of Renal Functions," on which papers will be read by Drs. Henry A. Christian, Boston; Theodore C. Janeway, New York City, and Leonard G. Rowntree, Baltimore. These papers will be discussed by Drs. Hugh Cabot, Boston; George Dock, St. Louis, and John T. Geraghty and William S. Thayer, Baltimore. In the evening Dr. Gorgas will give the presidential address on "Sanitation at Panama as it Relates to Sanitation in the Tropics Generally." A reception will follow. The subject for the second day's consideration is "The Development of Tissues in Vitro." Papers will be read by Drs. Ross G. Harrison, New Haven, Conn.; Montrose T. Burrows, New York City, and Robert A. Lambert, New York City, dealing, respectively, with the life of tissues outside the organism from the embryologic, physiologic and pathologic standpoints. These papers will be discussed by Drs. Leo Loeb, St. Louis; Warren H. Lewis, Baltimore, and others.

FOREIGN

Congress in the Orient on Tropical Medicine.—The third congress of the Far Eastern Association of Tropical Medicine is to be held at Saigon, French Cochin China, November 8 to 15. The first congress was held in Manila in 1910 and the second in Hongkong in 1912.

Centennial of Munich Hospital.—The fifteenth *Annalen* of the public hospitals of Munich is published as a volume of 722 pages, half of which is devoted to a historical review of the personnel and work of the leading municipal hospital during the century of its existence, affording an interesting oversight of the prevalence of epidemics and of the morbidity in general as the standards of hygiene have been raised in this large German city as the hundred years progressed.

Other Deaths Abroad.—The following deaths are noted: Alfred Lewis Galabin, M.R.C.S., England, 1872; M.D., Cambridge, 1873; consulting obstetric physician to Guy's Hospital, London; a member and president in 1889-90 of the Obstetrical Society of London and president of the Hunterian Society; for several years editor of the *Obstetrical Journal*, president of the section of obstetric medicine of the British Medical Association, 1892; author of standard text-books on midwifery and diseases of women; died at his home in London, March 25, from heart disease, aged 70.——Deputy Inspector General G. Saunders, C.B., M.R.C.S., England, 1845; who served throughout the Crimean War and was senior medical officer at Hong Kong during the fever epidemic in 1865; died at his home in Tunbridge Wells, March 6, aged 89.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, April 12, 1913.

The Government Inquiry Into Nostrums

Further evidence on the part of the proprietors of nostrums has been given at the government inquiry. Mr. Uredenburg, the literary representative of Raphael Tück & Co. (art publishers), stated that he wrote the health hints contained in the book, "Hints to Mothers by M.D. of London," issued by the proprietors of Steedman's Soothing Powders (a preparation extensively given to children during dentition by the poorer classes). He said that he obtained his information from various encyclopedias and popular medical works. He then submitted the matter to his own physician. The matter was next sent to Messrs. Steedman and the references to the soothing powders were inserted according to their instructions. The manuscript as amended was not submitted to the physician.

The Lister Memorial Fund

Considerable progress is being made with the Lister Memorial Fund. Committees have been formed by Oxford, Cambridge, Durham and other universities to promote the memorial, and arrangements have been made for the formation of committees in the British dominion and in foreign countries. The details of the memorial have been given in THE JOURNAL.

The Conveyance of the Anthrax Bacillus in Clothes

Anthrax is almost invariably contracted by persons working with infected wool, and is therefore confined to those engaged in that occupation. In the following case the victim was not brought into contact with the source of infection: A woman aged 19 came to Guy's Hospital with a pimple on her face and was given a lotion. Next day a diagnosis of anthrax was made, and on the following day she succumbed to the disease. At the inquest it was stated that her husband, a laborer, handled foreign hides. The men engaged in this work were provided with special coats but did not trouble to wear them, although three contracted anthrax, in 1903, 1905 and 1911. Dr. Spilsbury, pathologist, said that the woman must have contracted the disease from her husband's clothes. Possibly the bacillus got into her eye and so reached her nose. It was not necessary to have a scratch.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, April 4, 1913.

The Lessons of the Balkan War

On April 1, Professor Delorme, inspector-general of the military sanitary service, read before the Académie de médecine an interesting paper on long-distance transportation of the wounded during the Balkan War. Experience has shown that removal from the battlefield has been dangerous for the wounded Bulgarians and Servians as well as the wounded Turks. From hearing it repeated continuously that under the first aseptic dressing the healing of military wounds is easy, sure and constant, men have become persuaded that the transportation of a wounded man scarcely differs from that of a healthy man. They forget that the wounded man needs care during this transportation. The point of view which regards the clearing up of a battle-field as an administrative rather than a surgical problem is wanting in humanity. The principal mission of first-aid stations and ambulances is something more than the removal to a distance of the largest possible number of wounded. Account should be taken of the difficulties or the

hazards of the task. When, as in the Turkish army, the medical corps on the battle-field experience too great difficulties to assure the first treatment of wounds, it is desirable that at places where the wounded are assembled, as at crossroads or along the railroad, there should be stations for medical service and ambulances. When, as in the Bulgarian army, the line of removal along the route is of considerable extent and circumstances render transportation very slow and difficult, there is need of installing in the line of stations, if not hospital centers, at least centers where dressings may be applied, examined and renewed. Delorme thinks, moreover, that the service for the removal of the wounded along the route has not sufficient flexibility, and that the route and time of march of the ambulance wagons are too closely connected with that of the administrative wagons, whose speedy return to the sources of supply is a necessary condition.

Meeting of the Societies of Medical Students

Besides the associations of students which have existed in France for a long time, there have recently been formed, the Associations corporatives des étudiants en médecine for the purpose of facilitating the professional instructions of the members, of improving, completing and perfecting medical instruction, and of defending the present and future interests of medical students. These associations have recently formed a federation and have organized a congress which was held in Paris, March 27 to 29. The eight incorporated associations of medical students were from Algiers, Bordeaux, Lyons, Paris, Marseilles, Rennes, Caen and Tours. The medical sections of the general associations of students of Lille, Besançon and Grenoble were also represented. A resolution was passed demanding that the hospital *stage* should be extended to other services than those which now admit *stagiaires*, to relieve the overcrowding in the services now open and to make use of the clinical material in the other services. It was also voted that predominance should be given to the medical sciences, properly speaking, over the accessory sciences of medicine. The clinical examinations ought to be increased in number, and theoretical examinations decreased. A resolution was passed that a control ought to be established over proprietary schools of medicine, and that the examinations by jury should be modified so that the study and the value of examinations in the *écoles* and the *facultés* should be equal. Representation of students on the councils of the medical schools and on the disciplinary councils of the Public Charities (Assistance Publique) was also demanded. A protest was made against the admission of foreigners to the examination for internships, and demand was made that internships in the hospitals should be reserved for French students.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, April 18, 1913.

Annual Meeting of the German Surgical Association

Of the congresses held during the last week in March, the meeting of the Deutsche Gesellschaft für Chirurgie was the most important. In the present letter, therefore, I shall give a report of the transactions, selecting the most important subjects from the enormous amount of material presented.

BONE AND JOINT TUBERCULOSIS

Garrè of Bonn delivered the leading address on the treatment of tuberculosis of the bones and joints. Either the conservative or operative treatment should be applied, according to the individual case, and the indications and final results are different, according to the location of the affection. Tuberculosis of the shoulder-joint was treated in most cases with injections of iodoform, but in severe cases a resection by the method of von Langenbeck was made. Even in cases treated conservatively ankylosis usually resulted. The late results of resection were unexpectedly favorable, so that Garrè advocates enlarging the indications for resection. In tuberculosis of the elbow-joint of children a successful result is usually attained with injections of iodoform and fixation, but in adults resection must frequently be resorted to. The late results of conservative treatment are not very brilliant. Those in whom resection has been performed usually showed good healing, but ankylosis was present in half of the cases. The preferable technic is by Ollier's method and for secondary operations Helferich's method of interposition of tissue.

In suppuration of the wrist the ordinary resection should not be made, but one which spares as much of the tissues as possible. Hip disease should, as a rule, be treated conservatively with a walking cast with stirrup and iodoform treatment only in case of cold abscesses. A forcible correction should be avoided, and in case of contracture, treatment by extension is appropriate. After the joint has become free from pain, the result gained should be maintained by a large plaster cast or a leather splint; the Hessing apparatus presents no advantage. In every case ankylosis is to be aimed at. Only in the most severe cases should one attempt resection to save life. The final results of resection are discouraging: one-third of the patients died of tuberculosis and the remainder showed fairly good results only in half of the cases.

In the knee, the results of conservative treatment, even of mild cases, are not satisfactory; healing resulted in 51 per cent., generally with a stiff joint. On the other hand, resection carried out by the Textor incision gives good results. Subsequent investigation showed that, aside from about 5 per cent. who died from tuberculosis, 92 per cent. were cured. Even in children resection is advisable in all severe cases, as shortening often remains even after orthopedic treatment. Up to the thirteenth year of life there is the danger of later contracture after resection, which should be avoided if possible. In the ankle, resection is employed only in severe cases, according to the technic of König. Tuberculosis foci of the bone in the neighborhood of joints should be removed as early as possible; the cavity then plugged with a filling or with fat. Burrowing abscesses are punctured and injected with iodoform, but never incised. Roentgenotherapy has not given good results; its disadvantages are the small depth of action and the injury to the skin. General treatment in all cases of surgical tuberculosis is of the greatest importance, inunctions, baths, especially open-air treatment, climatic treatment, and sun-baths.

In the discussion, Bier of Berlin remarked that he applied conservative treatment even in severe cases of tuberculosis of the joints. He avoids every form of fixation of the diseased joint and treats it with passive hyperemia, iodid and removable dressings which relieve the joint of weight bearing. He presented a large number of severe cases which had recovered with complete mobility. De Quervain of Basel stated that he had seen splendid results from Rollier's treatment by insolation and mountain climate during the last ten years. The application of a general exposure to the sun and the continuation of the treatment for months and years are very important. Besides mountain climate, the seashore should also be considered. The cure of surgical tuberculosis under these circumstances results without the formation of scars and is therefore preferable to operations, which are now only rarely done in sanatoriums. In cases with amyloid degeneration and severe secondary infections this treatment is contraindicated.

Ritter of Posen applies active and passive hyperemia, the Roentgen rays and plaster casts. König of Marburg has seen good results from local and general treatment; he has found radiation with mercury quartz lamps a good substitute in our climate for the mountain sunshine. Wilms of Heidelberg has employed roentgenotherapy in surgical tuberculosis with good results. Especially joints of the upper extremities and lymph-nodes are favorably influenced by this treatment. A course of tuberculin treatment is to be recommended for patients who give a slight von Pirquet reaction. Mountain climate and sunshine treatment combined with roentgenotherapy give the best results. Voelcker of Heidelberg recommends in desperate cases of tuberculosis of the knee an open treatment with the joint opened up and immobilized until healing permits replacement.

Iselin of Basel treated 367 patients with Roentgen rays. The injurious by-effects liable are teleangiectasis and ulceration, which may occur even a year and a half later. He had fourteen cases of ulceration from this cause. He measures the dosage by the method of Sabouraud. On account of the danger of disturbances in growth, the large joints of children should not be treated by Roentgen rays. Tough, dry forms are resistant to the treatment, while soft, suppurating ones afford a good prognosis. Spondylitis contra-indicates it, because in consequence of the absorption under the action of the Roentgen rays, kyphosis may result. Müller of Rostock takes an intermediate stand. He remarked that social conditions often forbid treatment with sun-baths. Rosenbach of Göttingen explained the theory and technic of his tuberculin treatment. It is contra-indicated with active pulmonary processes. Friedrich of Königsberg has been forced to a greater amount of operative treatment on account of the peculiarity of his material. He warns against the too long-continued use of iodid (according to Bier) in children, as there is danger of injuring the ovaries and testicles. (Described in THE JOURNAL, 1912, lix, 233.)

(To be continued)

V. 6
1913

Miscellany

U. S. Senate Asked to License Friedmann

The following is taken from the *Congressional Record* of April 17:

MR. HUGHES: I introduce a bill, and ask unanimous consent for its present consideration.

MR. SMOOT: Mr. President, that has hardly ever been done in the Senate, and I think I shall have to object.

MR. HUGHES: I should like to have the bill read. I understand, of course, that objection can be made to its consideration.

THE VICE-PRESIDENT: The bill will be read by title.

The bill (S. 1222) authorizing and directing the board of medical supervisors of the District of Columbia to issue to Friedrich Franz Friedmann, without examination, a license to practice medicine and surgery in the District of Columbia, was read twice by its title.

MR. GALLINGER: Mr. President, I will have to object to unanimous consent being given to have the bill acted on at this time. There are pretty serious questions involved in it. I ask that it be referred to the appropriate committee.

THE VICE-PRESIDENT: Objection being made, the bill will be referred to the Committee on the District of Columbia.

MR. HUGHES: Mr. President, did I understand the Senator from New Hampshire to object?

MR. GALLINGER: I will have to object to the present consideration of the bill. I should like to look into it and consult some of the medical men of the District concerning it. It is a serious matter. It proposes to suspend existing law.

MR. HUGHES: The whole matter is serious. The disease which this doctor is engaged in fighting is an extremely serious matter.

MR. GALLINGER: Yes.

MR. HUGHES: Mr. President, did I understand the Senator was to see if we could not get away from objections raised by certain members of the medical fraternity and from the attitude of distrust and suspicion which seems to characterize the gentlemen who are representing the Government in their dealings with this scientist. I have been the recipient of countless letters, telegrams, telephonic communications, and personal requests from men who are standing on the brink of the grave who feel that perhaps their lives may be saved if they are permitted to take this treatment. Dr. Friedmann himself seems to be under the impression that he is absolutely under the control of the Federal service in this matter, and he thinks he is operating under the same sort of governmental supervision that he would be compelled to operate under in Germany. At his request I have introduced the bill. I regret very much that the Senator from New Hampshire thinks it necessary that the consideration of this matter should be delayed, when his single objection perhaps will mean the loss of the lives of men, women, and children who are eager and anxious to take all the risks, real or fancied, in connection with this treatment.

MR. STONE: Mr. President, will the Senator permit a question?

THE VICE-PRESIDENT: Does the Senator from New Jersey yield to the Senator from Missouri?

MR. HUGHES: I do.

MR. STONE: I should like to ask the Senator from New Jersey——

MR. WORKS: Mr. President, I again call for the regular order, since objection is made to the present consideration of the bill.

THE VICE-PRESIDENT: Objection being made, the bill will be referred to the Committee on the District of Columbia.

MR. HUGHES: Mr. President, I ask unanimous consent to have read a letter which I have received bearing on the subject matter of the bill I just introduced.

MR. PENROSE: Mr. President, I object to the reading of a letter on this subject. I do not want to pronounce this man a faker, but I think the Senate is going out of its way to give him advertisement. He may be a quack, for all I know. I have direct information that the reputable physicians of the country look with considerable doubt on his maneuvers, and that reputable medical journals criticize the Congress of the United States for the semiofficial recognition which they have already given him. I was surprised and shocked when I saw that a Senate document had been printed on his alleged cure. Were it not that the incident was past and closed, I had intended calling the attention of the Senate to the gross impropriety of recognizing a questionable "cure" by an official advertisement of that character. This is not an occasion for maudlin sentiment; it is a practical proposition whether the lives of thousands of people may not be threatened by a "cure" which is purely based on quackery and fraud.

MR. STONE: I should like to ask the Senator from New Jersey if Dr. Friedmann intends to charge $25 for each treatment?

MR. HUGHES: I have absolutely no information on that subject.

MR. LODGE: Mr. President, I ask for the regular order.

MR. HUGHES: I did not presume to ask Dr. Friedmann about that. I asked him if he would practice in the District of Columbia if given permission, and he said he would.

THE VICE-PRESIDENT: The regular order is demanded. If there be no further bills and joint resolutions, concurrent and other resolutions are in order.

Association News

THE MINNEAPOLIS SESSION

Rates for Round Trips to Minneapolis—Announcement of the Transportation Committee

The Committee on Transportation and Place of Session suggests that members consult the local ticket-agent in their home town for full information regarding rates, time limits, extensions and stop-over privileges preparatory to purchasing railway tickets for the Minneapolis meeting. The tariff schedules on file at every ticket-office will allow the local agent to quote rates from any point. In addition to this, with the assistance of the agent, a physician can plan for an additional trip either going or coming. Those who intend going to the Yellowstone Park, the Pacific Coast, Alaska or other points should arrange for tickets for the entire trip. These side trips, of course, may be arranged for from Minneapolis; but in most instances a better rate can be obtained if a complete itinerary is submitted to the local agent. The committee announces the following rates for the Minneapolis meeting:

The Transcontinental Association announces a fare via direct route from California common points to Minneapolis and St. Paul, of $75.70. Circuit fare, one way via Shasta route, or S. F. and P. S. S. Co. between San Francisco and Portland, or P. C. S. S. Co. between San Francisco and Seattle, $85.35 from San Francisco; from Los Angeles, $95.35.

From Bellingham, Everett, Spokane, Tacoma and Seattle, Wash., or Portland, Ore., to Minneapolis, $60. Inquiries should be made of your local ticket-agent for definite information concerning the date of sale and time-limit.

The Central Passenger Association advises the committee that summer tourist fares will be in effect at the time of the meeting in Minneapolis. These tickets are all of nontransferable form and will be on sale from June 1 to Sept. 30, 1913, with final return limit to reach original starting point not later than midnight of Oct. 31, 1913.

The Trunk Line Association has authorized the following rate of fare from points in its territory:

One and one-half first-class limited fare to trunk line western termini, plus summer excursion fares tendered therefrom for the round trip. Tickets to be sold to Minneapolis or St. Paul. Dates of sale, June 12, 13 and 14. Final return limit, tickets to be limited to reach original starting point, Oct. 31, 1913. Tickets to be sold going and returning by same route only. No validation of tickets for return passage will be required. Private or sleeping-cars occupied by passengers in Minneapolis or St. Paul will be parked at a charge of $10 per car per day.

We are advised that special trains and special cars are being arranged for from various points.

J. RAWSON PENNINGTON, Chairman.

Minneapolis by Way of the Northwestern Line

As THE JOURNAL has said before, there are several excellent railway lines between Chicago and Minneapolis, all of which will doubtless be used by members attending the annual meet-

ing. Among these is the Northwestern Line, which operates six through trains daily from its magnificent new terminal. In this station are a hospital and emergency rooms under the charge of a matron and trained nurses, and a completely equipped drug-store. The railway is double-tracked and protected by automatic signals. The route is through a region made famous by the early explorers, and is noted for its natural beauty. Leaving Chicago at night, one awakes near Merrilan, Wis., 277 miles northwest of Chicago. The first large city is Eau Claire, a lumbering and manufacturing point located on the Chippewa and Eau Claire rivers. From this point on, the picturesque scenery will be found of special interest. Just before reaching Hudson, a panoramic view of the surrounding country is obtained. Crossing the St. Croix River into Minnesota, the train makes a long sweeping curve to the north, and after leaving Stillwater Junction goes through a level, open country through Lake Elmo to St. Paul.

Revised List of Hotels Announced—Desirability of Making Reservations at Once

The Subcommittee on Hotels for the Minneapolis session, June 17-20, has revised the list of hotels. This new list should be followed in place of the one in THE JOURNAL, March 8. Most of the changes are in the hotels selected as headquarters for the sections. The commitee has made these new arrangements for the better entertainment of the members.

Those who are particular about their accommodations should secure reservations at once. They can write direct to the hotels, or to the undersigned, 1106 Donaldson Building, Minneapolis, Chairman of the Committee on Hotels, who will be pleased to give any assistance possible. In writing, one should state the scientific section of the Association preferred and also as exactly as possible the lodgings desired, that is, the approximate price, whether with or without bath, and who will be in the party. S. MARX WHITE, Chairman.

Hotel, Section Headquarters and Street Address	No. of Rooms	Without Bath		With Bath	
		Single	Double	Single	Double
RADISSON—*General Headquarters*—Seventh St., bet. Nicollet and Hennepin	320	$1.50	$2.50	$2.50 to $5.00	$4.00 to $7.00
WEST—*Practice, Pathology, Dermatology, Hospitals,* and *Nervous*—Fifth St. and Hennepin Av.	375	1.50 to 3.00	2.50 to 4.00	2.00 to 4.00	3.50 to 6.00
LEAMINGTON—*Surgery*—1013 Third Av., South	600	1.50	2.50	2.50 to 5.00	5.00 to 7.00
ANDREWS—*Obstetrics, Gynecology and Abdominal Surgery*—Fourth and Hennepin	200	.....	.....	1.50 to 3.00	2.50 to 4.00
DYCKMAN—*Ophthalmology*—Sixth St., bet. Nicollet and Hennepin	200	.....	.....	2.00 to 4.00	4.00 to 6.00
PLAZA—*Laryngology, Otology and Rhinology*—1700 Hennepin Av.	100	.....	.....	3.00 to 5.00	5.00 to 7.00
MAJESTIC—*Pharmacology and Therapeutics,* and *Diseases of Children*—Seventh and Hennepin	100	1.00 to 2.00	1.50 to 2.50	1.50 to 3.00	2.50 to 4.00
NICOLLET—*Stomatology*—Washington, Hennepin and Nicollet Avs.	150	1.00 to 1.50	2.00 to 2.50	2.00 to 2.50	3.00 to 3.50
ROGERS—*Preventive Medicine and Public Health*—27 Fourth St., South, corner of Nicollet	150	1.00 to 1.50	2.00 to 2.50	2.00 to 3.50	3.00 to 5.00
VENDOME—*Genito-Urinary Diseases*—19 Fourth St., South	200	1.00 to 2.00	2.00 to 3.00	2.50 to 3.00	3.50 to 4.00
ST. PAUL (in St. Paul)—*Orthopedic Surgery*—Fifth and St. Peter Sts.	300	.....	.....	2.50 to 5.00	4.00 to 7.00
OTHER HOTELS IN MINNEAPOLIS					
ALLEN—200 Third St., South, corner of Second Av.	65	1.00	1.50	2.00	2.50
CAMFIELD—First Av., South, and Eighth St.	100	.....	.....	1.00 to 2.00	2.00 to 3.00
CLINTON—Fourth Av., South, and Grant St.	65	.....	.....	2.00	3.50
ELGIN—Hennepin Av. and Eighth St.	150	1.00	1.50	1.50 to 2.00	2.00 to 3.00
HAMPSHIRE ARMS—Fourth Av., South, and Ninth St.	350	1.00	1.50	2.00	3.00
HASTINGS—Twelfth St. and Hawthorne Av.	150	.....	.....	1.50 to 2.00	2.00 to 3.00
MARYLAND—Grant St. and Vine Pl.	200	.....	.....	1.50 to 2.50	2.50 to 4.00
NATIONAL—Second Av., South, and Washington	200	1.00 to 1.50	2.00 to 3.00	1.50 to 3.00	3.00 to 5.00
REVERE—316 Second Av., South	100	1.00	1.50	1.50	2.50
ROSSLYN—707 Summit Av.	70	.....	.....	1.00 to 1.50	2.50 to 4.00
WILLISTON—500 Tenth St., South, corner of Fifth	60	1.00	1.50	2.00	2.50
ST. PAUL HOTELS					
ABERDEEN—Dayton and Virginia	200	.....	.....	1.50 to 4.00	3.00 to 5.00
FREDERICK—Fifth and Cedar Sts.	100	1.00	2.00	1.50 to 4.00	2.50 to 5.00
RYAN—Robert St.	300	1.00 to 2.50	2.00 to 4.00	2.00 to 4.00	3.00 to 6.00
WILLARD—Tenth and St. Peter Sts.	200	.75	1.25	2.00 to 4.00	3.00 to 6.00

Marriages

JONES L. MOOREFIELD, M.D., Guilford College, N. C., to Miss Viola Hudson of Pomona Mills, N. C., in Danville, Va., April 6.

HENRY FLOYD KEEVER, M.D., to Miss Elizabeth Mae Seely, both of Auburndale, Mass., April 2.

WILLIAM JOSEPH SCHMITZ, M.D., Baltimore, to Miss Anna Estelle Hebner, in Baltimore, April 8.

FLOYD BURKE RILEY, M.D., Chicago, to Miss Beulah Nye Bennison of Los Angeles, Cal., at Cedar Falls, Ia., April 24.

ARTHUR WARD VAN RIPER, M.D., to Miss Daisy Dwight, both of Passaic, N. J., in New York City, April 15.

JOHN T. TENNEY, M.D., Warner, Alta., to Miss Olga Polin of San Luis Obispo, Cal., at Spokane, Wash., March 22.

HARRY MCPHERSON BRANDEL, M.D., Oshkosh, Wis., to Miss Adele Marie Persch of Chicago, April 12.

J. LELAND BOOGHER, M.D., to Mrs. A. M. Holliday, both of St. Louis, April 12.

Deaths

Eliphalet G. Edwards, M.D. McGill University, Montreal, 1855; formerly president of the Kent County (Mich.) Medical Society and an honorary member of the Michigan State Medical Society; a surgeon in the British Army during the Crimean War and thereafter surgeon for the Grand Trunk Railway; for one term president of the College of Physicians and Surgeons of Ontario and for twenty years a member of the Ontario Medical Council; since 1883 a practitioner of Grand Rapids, Mich.; a member of the board of health and dean of the Grand Rapids Medical College; died in St. Mary's Hospital, Grand Rapids, January 18, from pneumonia, following an operation for strangulated hernia, aged 80.

James Edwin Harris, M.D. University of Maryland, Baltimore, 1886; for about fifteen years after his graduation in medicine and dentistry a practitioner of London, England; thereafter for six years a resident of Cape Town, Cape of Good Hope, South Africa, and for the last six years a resident of Baltimore; died in a sanitarium in Baltimore, April 8, from cerebral hemorrhage, aged 49.

Clara Jane Alexander, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1889; a member of the American Medical Association; formerly of Boston, Mass.; surgeon to the New England Hospital for Women and Children and attending physician to the Pope Dispensary of that hospital, Boston; for fifteen months a missionary of the American Board in Mysore, South India; died about April 13, in the Mary Calvert Holdsworth Memorial Hospital, Mysore.

Robert D. Robinson, M.D. Kentucky School of Medicine, Louisville, 1887; for several years a practitioner of Santa Rosalia Parral and Torreon, Mex.; one of the editors of the International Medical Association of Mexico; later a practitioner of El Paso and a member of the State Medical Association of Texas; died suddenly at his home in El Paso, April 9, from heart disease, aged 52.

Samuel Bell, M.D. University of Michigan, Ann Arbor, 1864; a member of the American Medical Association; surgeon of the Fifteenth Wisconsin Volunteer Infantry during the Civil War; formerly surgeon-general of the department of Wisconsin, G. A. R., and president of the first board of health of the state; a resident of Beloit, since 1874; died at his home, April 18, aged 71.

Hezekiah John Crumpton, M.D. Rush Medical College, 1871; a member of the American Medical Association; who went to California during the gold rush in 1849 and was for many years engaged in mining; vice-president of the Society of California Pioneers; died at his home in Piedmont, Cal., April 8, from senile debility, aged 84.

Marion D. Carter, M.D. Missouri Medical College, St. Louis, 1882; a member of the American Medical Association; of Los Angeles, Cal.; aged 55; died in the Crocker Street Hospital, Los Angeles, April 10, from injuries received two days before in a collision between his automobile and an interurban car at Nadeau Station.

George Washington Corey, M.D. Rush Medical College, 1859; surgeon of the Twelfth Missouri Cavalry during the Civil War; later division surgeon of the Union Pacific System at Cheyenne, Wyo., and a practitioner of Sawtelle, Cal.; died in the hospital of the Soldiers' Home, Sawtelle, April 2, from senile debility, aged 80.

Jared Grover Baldwin, M.D. New York University, New York City, 1853; consulting physician to the Hahnemann Hospital, New York City, and for many years censor of the New York Homeopathic College and Hospital; died at his home in New York City, April 11, from senile debility, aged 85.

Morris D. Rouse, M.D. University of Pennsylvania, Philadelphia, 1866; a veteran of the Civil War; for thirty years a practitioner of Buffalo; died at his home in that city, April 10, as the result of injuries received two days before, in a collision between his bicycle and an automobile, aged 76.

Howard C. Rice, M.D. Ensworth Medical College, St. Joseph, Mo., 1910; a member of the American Medical Association; instructor in materia medica in the Training School for Nurses, Ensworth Hospital; died at his home in St. Joseph, April 9, from pneumonia, aged 30.

Thomas M. Jackson, M.D. Cincinnati College of Medicine and Surgery, 1874; a member of the Medical Society of the State of Pennsylvania and president of the Mercer County Medical Society in 1912; died at his home in Hadley, Pa., April 7, from arteriosclerosis, aged 67.

Byron Clifford Cheeseman, M.D. College of Physicians and Surgeons, Baltimore, 1880; a member of the American Medical Association; a member of the staff of St. Joachim's Hospital, Watertown, N. Y.; died at his home in that city, April 3, from nephritis, aged 56.

Harry Frederick Diers, M.D. Northwestern University Medical School, Chicago, 1911; of Bristow, Neb.; a member of the American Medical Association; died at the home of his parents in Gresham, Neb., April 3, from abscess of the brain, aged 26.

Abraham S. Rosenberger, M.D. Homeopathic Hospital College, Cleveland, 1870; of Covington, O.; died at the home of his daughter in Dayton, O., April 6, from nephritis, aggravated by exposure and excitement during the recent flood, aged 64.

Edward Sawyer Bacon, M.D. Harvard Medical School, 1889; a member of the American Medical Association and a specialist on diseases of the ear, nose and throat of Providence, R. I.; died at his home in that city, April 8, aged 50.

John F. Collins, M.D. George Washington University, Washington, D. C., 1886; for many years a medical examiner in the pension office, Washington; died in Garfield Hospital in that city, April 11, from arteriosclerosis, aged 67.

Joseph Davis, M.D. Albany (N. Y.) Medical College, 1908; a member of the American Medical Association; medical director of the Samuel W. Bowne Memorial Hospital, Poughkeepsie, N. Y.; died at the state sanatorium for tuberculosis, Raybrook, N. Y., April 1, from tuberculosis, aged 26.

Charles Born, M.D. University of Leipzig, Germany, formerly assistant professor of anatomy in his alma mater; for more than twenty years a practitioner of Cincinnati; died at his home, April 3, from heart disease, aged 73.

Henry G. Addy (license, New Brunswick) a practitioner since 1882; surgeon of volunteers during the Civil War and since its close a resident of St. John, N. B.; died recently at his home in St. John, aged 78.

John M. Harrah, M.D. Rush Medical College, 1865; a member of the Indiana State Medical Association and a pioneer practitioner of Greene County; died at his home in Switz City, April 12, aged 73.

Isaac Whittington Timmons, M.D. Homeopathic Medical College of Missouri, St. Louis, 1870; for forty-two years a resident of Winona County, Minn.; died at his home in Winona, April 13, aged 79.

Egbert D. Doolittle, M.D. Bellevue Hospital Medical College, 1870; formerly president of the Lehigh Valley Homeopathic Medical Society; died at his home in Easton, Pa., April 12, aged 66.

S. Jean Stevenson-Monroe, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1870; died at her home in Bemus Point, N. Y., January 4, from carcinoma of the rectum, aged 71.

Patrick Kelley Wortham, M.D. Missouri Medical College, St. Louis, 1879; for many years a practitioner of Waco, Tex.; died at the home of his daughter in that city, April 8, aged 75.

George W. Sprinkle (license, Virginia); a member of the Medical Society of Virginia; for forty-two years a practitioner of Smyth County; died at his home in Marion, April 8, aged 67.

Lawrence Y. Abernathy, M.D. Chattanooga (Tenn.) Medical College, 1904; for six years a member of the hospital corps of the Army; died at his home in Chattanooga, April 5, aged 30.

George Martin, M.D. Laval University, Montreal, Que., 1906; for several years connected with the Bruchesi Institute in that city; died at his home, April 1, from diphtheria, aged 31.

Edward E. Fauver, M.D. Lincoln (Neb.) Medical College, 1895; of Loveland, Colo.; died at St. Luke's Hospital, Denver, April 4, a month after a surgical operation, aged 40.

John H. Goss, M.D. Cincinnati College of Medicine and Surgery, 1860; of Lancaster, O.; died in the Park Street Hospital in that city, April 14, from diabetes, aged 75.

Alfred A. Bagwell, M.D. Medical College of Georgia, Augusta, 1889; a member of the Medical Association of Georgia; died at his home in Ingleside, Ga., April 5.

Harry A. Stutzman, M.D. Medico-Chirurgical College of Philadelphia, 1905; died at his home in Tower City, Pa., April 4, from pleuropneumonia, aged 36.

Snider M. Carlton, M.D. Reform Medical College of Georgia, Macon, 1859; died at his home in Thornton, Tex., April 2, from senile debility, aged 83.

Charles F. Nichols, M.D. University of Maryland, Baltimore, 1887; postmaster of Vienna, N. Y.; died at his home in that place, April 4, aged 47.

Hiram H. Gunby, M.D. University of Maryland, Baltimore, 1855; died at his home in Crisfield, Md., about April 9, from pneumonia, aged 80.

Daniel E. Lake, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1871; died at his home in Fulton, N. Y., March 1, aged 75.

William P. Booker, M.D. Kansas City (Mo.) Hospital College of Medicine, 1885; died suddenly at his home in Caney, Kan., recently.

Edward Francis Guth, M.D. University of Pennsylvania, Philadelphia, 1862; died at his home in Philadelphia, March 13, aged 72.

Isaac Sternlicht, M.D. University of Vienna, Austria, 1889; died at his home in New York City, April 9, from heart disease, aged 50.

J. A. Hall (license, Arkansas, 1905); died at his home in Greenway, March 18, from nervous prostration, aged 53.

Thompson J. Taylor, M.D. Jefferson Medical College, 1874; died at his home in Richmond, Ky., March 20, aged 60.

William H. Sampson (license, Indiana); died at his home in Brookston, April 5, from paralysis.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

STANDARDIZATION OF DISINFECTANTS

Report of the Council on Pharmacy and Chemistry

Believing the general adoption of a standard method for the valuation of disinfectants important, the Council appointed a committee to consider the feasibility of adopting such a method. The committee submitted a report which was adopted by the Council, with the recommendation that it be published. Following is the report.

W. A. PUCKNER, Secretary.

Your committee, having considered the question of the recommendation of a method for the standardization of disinfectants, respectfully submits the following:

In the examination of disinfectants it is necessary that due attention be paid to certain factors which have an important bearing on the results to be obtained, among these factors being the test organism, the temperature of the experiment, the proportion of culture to disinfectant, the amount of inoculation in subculture tubes, the media for subculture and organic matter. Neglect of attention to these factors will necessarily result in misleading results. There are at the present time three methods that may be given consideration.

RIDEAL-WALKER METHOD

The first is the Rideal-Walker method, extensively used in England and the British colonies. The original Rideal-Walker method seems to have the following objectionable features: (1) the latitude allowed in determining the coefficient; (2) the lack of definiteness in the proportion of culture added to the disinfectant; (3) the latitude allowed in the temperature of medication; (4) the use of seeding tubes 5" by ⅝" with cotton plugs, which necessitated their removal from the water bath and (5) the possibility of shaking from the sides of the tube organisms that had not been fully exposed to the action of the disinfectant and thus giving erroneous results.

The first objection has been eliminated by some workers, by arbitrarily limiting the determination of positive or negative result to a 2½-minute or 5-minute period. The other objections, however, still stand.

THE LANCET METHOD

The second is the *Lancet* method, a modification of the Rideal-Walker. Although in some respects a distinct advance over the Rideal-Walker method, it possesses the following objectionable aspects: (1) variations in strains of *B. coli communis* are known to be greater than those in strains of *B. typhosus*; (2) McConkey's bile salt media exert a variable but none the less restraining influence on attenuated organisms of the typhoid-colon group; (3) the method gives no definite rule for decreasing the strength of dilutions tested; (4) lengthening of the time to thirty minutes appears to have no very special advantage; (5) the special apparatus required, particularly the spoons, interferes to some extent with the general employment of the method.

THE HYGIENIC LABORATORY METHOD

The third method is that known as the Hygienic Laboratory phenol coefficient. This method has some of the features of the Rideal-Walker method as well as the *Lancet* method, but also contains important modifications. This method has been quite generally adopted in the United States and is now used by the federal government in connection with the purchase of disinfectants. It has also been officially adopted by some state boards of health. At the Annual Conference of State Boards of Health with the Public Health Service, held in Washington, D. C., June 1, 1912, the following resolution was passed:

"*Resolved*, That the United States Public Health Service Hygienic Laboratory method for the determination of the phenol coefficient of disinfectants be recommended to the several state boards of health as the standard method; that all regulations regarding disinfectants be based on this standard; and that the phenol coefficient be required to be stated on the label of each package containing such disinfectant."

It is evident from the above statements that the method is coming into very general use in the United States and probably will supplant the other methods for the standardization of disinfectants in this country.

As originally proposed, the method did not require the use of organic matter in performing tests, but has recently been modified, so that the test may be used either without or with organic matter.

Your committee has considered the question carefully and has decided to recommend to the council the adoption of the Hygienic Laboratory phenol coefficient as published in Hygienic Laboratory Bulletin 82. The details of the test, as well as a discussion of the various factors concerned in the standardization of disinfectants, are described at length in a paper entitled, "A method of standardizing disinfectants with and without organic matter," in the bulletin referred to above.

FATHER JOHN'S MEDICINE AND THE FOOD AND DRUGS ACT

Mrs. Oscar W. Bean, Amesbury, Mass., writes:

"I have written to the Bureau of Chemistry on the subject: What does 'Father John's Medicine' contain? It is guaranteed under the Food and Drugs Act of June 30, 1906, No. 918. I always had the impression that the ingredients of all 'patent medicines' would be given when asked for after the pure food laws had been enforced and of course thought they'd be at Washington. Not finding them there, I would very much like to know its contents."

The hundreds of inquiries we receive from laymen are, as a rule, answered direct by mail. The one given above has been so answered. Our reason for printing it is that it is typical of many we get and may prove of interest to our readers.

As we told Mrs. Bean, "Father John's Medicine" is a nostrum. Like all nostrums, its composition is known only to the manufacturers. Its ingredients to-day may be different from its ingredients of yesterday, and these in turn differ from those of to-morrow. When analyzed two years ago, the chemists of the Connecticut Agricultural Experiment Station reported "Father John's Medicine" to be essentially a cod-liver oil emulsion containing about 37 per cent. of cod-liver oil by weight.

Much misunderstanding exists regarding the working of the Food and Drugs Act and the meaning of the legend: "Guaranteed under the Food and Drugs Act." This act ("the pure food law"), does not require the manufacturers of "patent medicines" to make public the composition of their nostrums. It merely demands that if the medicine contains any one of eleven drugs, or the derivatives of these drugs, the quantity or proportion of such drugs must be given on the label. These eleven drugs are alcohol, morphin, opium, cocain, heroin, alpha- or beta-eucain, chloroform, cannabis indica, chloral hydrate and acetanilid. The nostrum may contain any number of the hundreds, possibly thousands, of other drugs known and the public be none the wiser. It may contain some of the most dangerous poisons known to science, such as strychnin, arsenic, prussic acid and aconite, and no warning needs to be given of their presence. So far as the clause "Guaranteed under the Food and Drugs Act" is concerned, it means only that the manufacturer has applied to Washington for a serial number. This application is entirely optional and in making it he is not required to give any information about his product. A "patent medicine" may be, and in many cases has been, proved to be a fraudulent product, that is, misbranded or adulterated within the meaning of the act. These facts are not considered in the issuance by the government of a serial number. The only value of the guarantee is the protection it gives to the individual retailers of the product should it be declared misbranded or adulterated under the act. In other words, it throws the responsibility for misbranding or adulteration back on the manufacturer and not on the retailer.

The widespread misinterpretation of the guarantee clause has been brought about, largely, by unscrupulous manufacturers who try to make the public believe that the government guarantees the purity or value of the products on whose labels the guarantee clause appears. When the Canadians enacted a

V. 6
1913

law controlling the sale of "patent medicines"—which they did about three years after the passage of our own law—they recognized the abuse of the guarantee clause and specifically prohibited by law the use of the term "guaranteed." They also made it illegal for any manufacturer to indicate that the certificate of registration (corresponding to the "serial number" in this country) in any way implied a recommendation or guarantee on the part of the government as to the merits of the article. This prohibition applies not only to statements on the label but to any published advertisements. Our national Food and Drugs Act needs modifying in this regard.

"ORIGINAL PACKAGES"

That insidious form of advertising known as the "original package" method, in which the physician is made to act as a go-between, is not peculiar to the United States; the same evil exists in Great Britain. Here is what the *Medical Press and Circular* has to say about it:

"The patent medicine vender is putting up a great fight in his efforts to get a firm grip on the medical profession. Every post brings us so-called 'literature' and samples of wonderful synthetic drugs which emanate mostly from Germany. There is a similarity between them all; their names end in 'on' or 'al' or 'ex,' a magnificent procession of letters announces their alleged chemical composition, and a list of their properties is a splendid mass of polysyllabic perfidy. They all claim to be strictly 'ethical' preparations, and they publish a formula which is either unintelligible or untruthful. Some of these drugs may be useful, but great care is necessary in prescribing them. If they are ordered in their original packages, the way is instantly laid open for the self-drugging habit. If the chemist dispenses them in his own containers, the patient, when he has learnt what he is taking, feels aggrieved at having to pay an enhanced price for what he could buy anywhere himself, and feels, too, as if his case was not receiving real individual attention—much as if his tailor passed off a ready-made suit on him. In a few years we shall have before us enough insurance statistics to form a fair idea of the extent to which these proprietary medicaments are used. The prescribing of these preparations is only one degree removed from the evil of self-dosing with 'patent' medicines. Let us hope that this practice will suffer a rapidly atrophic death at the hands of the medical community."

LOPEZ

A Fraudulent Cure for Syphilis

Dr. C. S. Bliss of Coggon, Iowa, writes:

"I am inclosing a pamphlet, "Lopez on Blood and Skin Diseases." I do not know what the remedy is but the pamphlet is getting people afraid of mercury and especially inunctions."

Lopez is called by its exploiters, the Lopez Remedy Company, Wichita, Kan., "the great Hot Springs remedy." According to their booklet:

"Lopez is a high-class preparation, scientifically compounded entirely from more than nine of the purest herbs known or obtainable. Each separately tested as to purity, strength, etc., then as carefully and accurately compounded as the druggist prepares your physicians' prescriptions. Positively contains no mercury, morphin, cocain or other poisons, and is as much a specific for children as for adults."

Like most concerns that sell a cure for syphilis, the Lopez Remedy Company rings the changes on the dangers of the mercurial treatment of this disease. And the usual farrago of nonsense is indulged in relative to the superior properties of "vegetable remedies." The federal authorities seized a quantity of this nostrum alleging that it was misbranded: first, in that the use of the word "specific" on the label "was unwarranted and misleading inasmuch as the article was not a specific"; second, in that the alcohol in the preparation "was not declared in the manner prescribed" by law; third, in that the therapeutic claims made for the stuff were rankly false and fraudulent. When the case came to trial, the judge held that lying about the curative and therapeutic properties was not misbranding and directed the jury to return a verdict of acquittal; this, too, in spite of the fact that although the stuff contained over 27 per cent. of alcohol, the label failed to state correctly the proportion of this drug as the law requires. The government chemists analyzed the nostrum and reported finding alcohol, potassium iodid, podophyllum, sarsaparilla, stillingia, eucalyptus and gentian. The analysis indicates that Lopez differs but little from the various "sarsaparilla compounds" put out by "patent medicine" makers and which used to be very popular. Whatever real or imaginary benefit was or is derived from such mixtures is due to the potassium iodid and the laxative drug they may contain. The absurdity, not to say viciousness, of recommending a preparation of this sort for the cure of syphilis can be appreciated only by physicians, but the public should at least be given warning.

Correspondence

Value to the General Practitioner of Special Training in Pulmonary Diseases

To the Editor:—It should be admitted that one of the best ways for the general practitioner to develop his general knowledge is through the specialties. It is not enough to depend entirely on places doing general work, such as the general medical dispensary, invaluable as such training is; for many of the conditions formerly treated solely in the general medical dispensaries are now handed over to special dispensaries. The result is better diagnosis and treatment for the patient, and better training for the attending physician. It is surely obvious why a dispensary for diseases of the nervous system or for diseases of children offers advantages of instruction to the physician unobtainable in the general medical dispensary, even if it attempts to handle these cases.

This generalization applies with special force to pulmonary diseases, which have long waited to receive the limited special consideration which they now enjoy. From the point of view of this note, such specialization is of interest only in so far as it relates to the general practitioner. Surely a class of diseases responsible for one-fifth of the total mortality, rendering thousands of victims chronic invalids, and causing untold suffering and expense—all of which are generally considered to be more or less within the possibility of control—deserves special consideration from the general practitioner, provided this will result in suitable returns.

If development in pulmonary diseases is not sought in the special dispensary or institution, on what sources is the general practitioner going to depend for his knowledge of diseases of the lungs? There are first, the field of general practice; secondly, the general medical dispensary and hospital ward, and thirdly, the physician's early experience. Although general practice offers opportunities for training in pulmonary diseases obtainable in no other way, it still holds true that the general practitioner will develop himself more completely and certainly more rapidly in many phases of the subject by spending some time in their special study. As for the general medical ward and dispensary, unsurpassed as they are in many of the aspects of pulmonary cases, they do not offer a man all that he needs to make him proficient in pulmonary work, which in its details and in its far-reaching relations fails utterly to receive its due measure of consideration in these places. As for a physician's early training, granted it has been in the best undergraduate course in medicine, and pursued later for a number of years in a thoroughly up-to-date hospital, no one who has properly estimated his own knowledge of pulmonary diseases at the end of this time will be so bold as to maintain that he concluded his course as resident proficient in pulmonary diagnosis or treatment, or in any measure cognizant of the broader departments of the subject.

What additional advantages are provided or what gaps are filled up in the special dispensary? Compare for a moment the handling of tuberculous patients in a well-conducted tuberculosis dispensary and in the best type of general medical dispensary. The factor of the amount of time allotted to each case is a strikingly distinguishing feature between the two, for in the latter dispensary a very limited amount of time is available to each patient, and in the former the amount of time is limited only by the necessities of each case. This makes possible another distinguishing factor, which is the use of the proper method in studying these cases, the physician's development being promoted by spending a relatively large amount of time on a few cases, and not retarded by spending the same amount of time on a large number of cases. One part of the method in these dispensaries is to chart all the physical findings, both normal and abnormal, a practice that if continued long enough perfects one in the art of physical diagnosis to an extent available in no other way and will prove of the greatest service in acute as well as in chronic cases.

Progress along these lines is slow, and is attained only by patient and painstaking effort. Not every one realizes how complicated and difficult a subject physical diagnosis of pulmonary conditions is, but a person is much impressed by this if he reviews his own past experience, or observes students in the process of studying physical signs of the lungs. The heart and other organs, in both health and disease, as a rule present much simpler problems, as far as the eliciting of physical signs is concerned, than do the lungs. Another advantage of the special dispensary to the practitioner is the coming in contact with the experience and stimulus of experts in this line of work. Of inestimable value too is the knowledge of treatment and prevention of tuberculosis cases, including an insight into the broad economic and sociologic aspects of the subject which have wide general significance.

I have barely touched on some of the advantages to the general practitioner to be derived from a special study of pulmonary diseases. If he will look more deeply into the subject, if he will learn the opinion of those who have so specialized, and above all if he will test out these advantages by taking such a special course himself, he will be convinced of the truth of these remarks. Especially to the young practitioner who has time for dispensary work on his hands, is such special training to be recommended.

CHARLES M. MONTGOMERY, M.D., Philadelphia.

Sterility—A Remediable Cause

To the Editor:—When in general practice, I was occasionally consulted for the relief of sterility by couples who had been married several years, and in whom there was no apparent physical disability.

In searching for the causes, I found a suggestion in an old edition of the work on midwifery by Cazeaux that led me to think that the condition was often maintained by too frequent sexual indulgence.

Cazeaux suggested that in women the ovum is usually thrown off at the time of menstruation; but that during an orgasm provoked by sexual congress the ovum might be discharged at other times. I reasoned that in this way the ova were constantly thrown off before reaching maturity, and therefore were incapable of fecundation. I advised that for five or six months all sexual intercourse should be abstained from excepting immediately before and immediately after menstruation. I feel sure that in fifteen or twenty cases pregnancy occurred as a result of following this advice, and I am confident that in some, subsequent conceptions were brought about in the same way.

From my observation, I came to believe that sterility from these causes occurred most frequently when the husband and wife were peculiarly vigorous and especially congenial.

AN OLD PRACTITIONER.

[COMMENT.—"An Old Practitioner" is a well-known physician of long experience who does not care to have his name published; he is not a gynecologist.—ED.]

Gauze as a Scarifier in Vaccination

To the Editor:—I am convinced that it is fully worth while to call further attention to a new method of vaccination, originated by the Public Health Service surgeons now in the Philippines. In this method a small piece of gauze (plain and sterile) is used as a scarifier. The gauze is simply drawn over the index-finger and held by the thumb and other fingers, and the point selected is briskly rubbed until slightly abraded over an area about equal to that of a thumb-nail. The virus is then deposited on the abraded area and allowed to dry. The gauze used to rub with can be bound over the point of vaccination, if desired, but should be discarded on the following day, as if allowed to remain it may adhere and give further trouble.

This method is well suited for work on women and children. Its authors state that the operation is completed while the patients are "expecting every minute to be the next." Either capillary tubes or ivory points can be used to furnish the virus; the tubes are better, perhaps, as the virus is more abundant than that on the points, and no point is in evidence. In other respects the technic is the same as in other methods. The percentage of takes equals other methods, and fainting of nervous patients is eliminated.

F. J. MCKINLEY, M.D., Pala, Cal.

[COMMENT.—Although this procedure is by no means a new one, we are glad to give further publicity to it for the benefit of those who may not have heard of this method.—ED.]

Ligneous Phlegmon of Abdominal Wall

To the Editor:—There is an error in my article on this subject (THE JOURNAL, April 5, 1913, p. 1039). In the quotation on page 1042, this language is used: "Powers quotes with approval the suggestion of Friedrich in favor of wide excision." The next sentence commences: "In certain cases." These three words "in certain cases" belong to the former sentence, which should read, "Powers quotes with approval the suggestion of Friedrich in favor of wide excision in certain cases." The error is one of punctuation, for which I may have been partly responsible.

W. W. GRANT, M.D., Denver.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FIRST FIFTEEN MEDICAL COLLEGES IN THE UNITED STATES

To the Editor:—Please name the first fifteen medical colleges organized in the United States and the dates of organization.
D. E. F.

ANSWER:

1. 1765: Department of Medicine of the College of Philadelphia, now the University of Pennsylvania Department of Medicine.

2. 1767: Medical Faculty of King's College, New York; reorganized as Columbia College Medical Faculty 1792; merged with the College of Physicians and Surgeons of City of New York, 1817.

3. 1782: Harvard Medical School, Boston.

4. 1797: Dartmouth Medical School, Hanover, N. H.

5. 1807: University of Maryland, Faculty of Phys'c (now School of Medicine), Baltimore.

6. 1807: College of Physicians and Surgeons of the City of New York; absorbed Columbia College Medical Faculty in 1317 became again Medical Department of (then) Columbia University in 1860 (see Fig. 2 above).

7. 1810: Yale Medical School, New Haven, Conn

8. 1816: Transylvania University Medical Department, Louisville, Ky.; became Kentucky School of Medicine, 1850; merged with University of Louisville, 1908.

9. 1819: Medical College of Ohio, Cincinnati; became Medical Department of University of Cincinnati in 1887; absorbed Miami Medical College and became Ohio-Miami Medical College of the University of Cincinnati in 1909.

10. 1820: Medical School of Maine, Brunswick, Maine; Medical Department of Bowdoin College.
11. 1823: Medical College of South Carolina, Charleston.
12. 1825: Columbian College (now George Washington University) Medical Department, Washington, D. C.
13. 1825: Jefferson College Medical Department, Philadelphia (now Jefferson Medical College).
14. 1825: University of Virginia, Department of Medicine, Charlottesville, Va.
15. 1828: Medical Academy (now college) of Georgia, Augusta, Ga.

EPILEPSY AND AMYOTROPHIC LATERAL SCLEROSIS

To the Editor:—Could you furnish me with information as to the occurrence of epilepsy or of epileptiform attacks in association with amyotrophic lateral sclerosis? S. F.

ANSWER.—Amyotrophic lateral sclerosis, a disease in which the motor nervous system in its totality progressively degenerates, is never seen in association with epilepsy or epileptiform attacks. The reason for this negative finding might be that the degeneration proceeds from the periphery toward the cortical elements too slowly to produce the symptoms of irritation—epileptiform attacks. The fibrillary twitchings seen in the degenerating muscle-fibers in a case of amyotrophic lateral sclerosis may have a superficial resemblance to epileptiform attacks, but the former are more or less constant, involve only a few fibers and never cause a contraction of the muscles in mass, while the latter occur at intervals and affect entire groups of muscles *in toto*. The fibrillary tremor is an expression of weakness in a dying muscle; the epileptic or epileptiform attack rather expresses an overflow of energy in a strong muscle.

While epileptiform attacks are foreign to the symptom-complex of amyotrophic lateral sclerosis, they may occur in the same patient as an independent affection, just as any other disease might develop in one already suffering. It is quite possible that a complicating arteriosclerosis or syphilis may demonstrate its presence by convulsive attacks not distinguishable from epilepsy. Indeed, the entire disease amyotrophic lateral sclerosis, with its atrophy and spasticity, may be simulated by syphilis of the central nervous system, which has also epilepsy as one of its many symptoms. So far as we know, the literature does not furnish any examples of true amyotrophic lateral sclerosis occurring in association with epilepsy or epileptiform attacks.

"NURITO," "MOTHERSILL'S SEASICK REMEDY" AND "MARK WHITE'S GOITER TREATMENT."

To the Editor:—Please give: (1) Analysis of "Nurito," a so-called rheumatism cure; (2) analysis and merits of "Mothersill's Seasick Remedy"; (3) information concerning the Mark White Goiter Treatment. M. N. A., Illinois.

ANSWER.—1. An analysis of "Nurito" and a discussion of the produce appeared in THE JOURNAL, Aug. 10, 1912; see also page 461 in the new edition of "Nostrums and Quackery." Its composition was found to be:

Pyramidon	60 per cent.
Phenolphthalein	6 per cent.
Milk sugar	34 per cent.

2. Mothersill's Seasick Remedy was discussed in THE JOURNAL, July 2, 1910, and Jan. 4, 1913, and the matter appears in the new edition of Nostrums and Quackery. Analysis showed the chief constituent to be chlorbutanol (chloretone).

3. The Mark White goiter treatment is put on the market by one Mark White, a "horse doctor" who calls himself "president and general manager" of the Mark White Goiter Treatment Company and "discoverer of Goitreine." Mr. White assures the sufferers from goiter that if they will only buy Goitreine they "may be practically sure of an immediate and permanent cure." White says that his treatment "cannot possibly harm you in any way." Possibly not, but the Denver papers of May 23, 1911, reported a case of collapse and death in a woman following an injection given in White's office. The paper stated that the death certificate, which was signed by a DR. W. A. Gray, gave "fatty degeneration of the heart and goiter" as the cause of death. Dr. W. A. Gray was the licensed physician employed by Mark White to administer injections and thus "get around" the requirements of the state medical practice act. The Mark White Goiter Institute offers to divide with physicians the money it gets from its victims. To some physicians it offers $10 for every $50 victim, with an additional $5 for every $50 increase; to other physicians it makes a straight 50 per cent. commission offer. Says Mark White:

"You would be expected to make a cash charge to the patient for the treatment, remitting on the same day our 50 per cent. to us, when ordering the treatment, giving the treatment in no cases for less than $50."

White's opinion of the medical profession must be pretty low, for he wrote to a number of medical societies, asking them to print in their bulletins full-page advertisements of his goiter cure in which he made the proposition of 50 per cent. commission to physicians.

RESPONSIBILITY OF THE PHARMACIST WHEN A PRESCRIPTION CALLS FOR HEAVY DOSAGE

To the Editor:—Please answer the following: If a prescription calling for 4 ounces of veratrum viride, in an 8-ounce mixture—dose 2 teaspoonfuls every two hours—is dispensed as written, by a registered pharmacist, without consulting the physician regarding the heavy dosage, and ill effects follow its use, who is to blame?

X. Y. X.

ANSWER.—The rule with reference to the responsibility of the pharmacist is that he shall exercise due care to avoid mistakes on the part of both himself and the physician. If an evident error is made in a prescription, the pharmacist should not put it up until the error has been corrected. In case of doubt as to the dosage of any ingredient in a prescription, he should consult the prescribing physician to determine whether the amount prescribed is that intended. If the physician sanctions the amount given in the prescription, the druggist is relieved from responsibility, unless the amount given would evidently produce toxic effects. In the case referred to it is not specified what preparation of veratrum viride was prescribed. If it was the tincture, the dose is four times that given by the Pharmacopeia; but it must be remembered that the Pharmacopeia gives the average and not the maximum doses. The amount therefore could be given to some patients if deemed advisable by the physician. If the prescription called for the fluidextract, however, the dose would in all probability be a poisonous one, and should not be put up.

LITERATURE ON JACKSON'S MEMBRANE

To the Editor:—I would greatly appreciate it if you would refer me to some literature on Jackson's membrane—that peculiar formation associated with Lane's kink. D. L. D.

ANSWER.—The following are references found in THE JOURNAL index for the last two years:

Mayo, C. H.: Intestinal Obstruction Due to Kink and Adhesions of the Terminal Ileum, *Surg., Gynec. and Obst.*, March, 1911.
Connell, F. G.: Ileocecal Adhesions (Lane's Kink and Jackson's Membrane), *Surg., Gynec. and Obst.*, November, 1911.
Lejars, F.: Lane's Kink of Ileum and Jackson's Membrane, *Semaine méd.*, Dec. 6, 1911.
Hamburger, S.: Ileus from Lane's Kink, *Hospitalstid.*, Oct. 9, 1912.
Kaufmann, W.: Ileocecal Adhesions (Lane's Kink), *Southern Med. Jour.*, October, 1912.
Chandler, C. E.: Lane's Kink and Jackson's Membrane, *Vermont Med. Month.*, February, 1913.
Klein, C. F.: Lane's Kink of Ileum, *New York Med. Jour.*, Nov 9, 1912.
Connell, F. G.: Etiology of Lane's Kink, Jackson's Membrane and Cecum Mobile, *Surg., Gynec. and Obst.*, April, 1913.
Eastman, J. R.: The Fetal Peritoneal Folds of Jonnesco, Treves and Reid and their Probable Relationship to Jackson's Membrane and Lane's Kink, *Surg., Gynec. and Obst.*, April, 1913

STIMULATION OF THE DEVELOPMENT OF INFANTILE SEXUAL ORGANS

To the Editor:—Please give information as to the following case: A boy aged 13 was born with complete cryptorchidism. By an operation when he was 5 years old the testicles were brought into the scrotum, but they failed to develop any further. The boy is 5 feet 5 inches in height, and very strong. He has no hair on the pubes, and his sexual organs are of the size of those of a boy of 3 years, one of the testicles being even smaller and very soft.

1. Is there any possibility of stimulating further development of these infantile organs?
2. Where can extracts of testicle be obtained?
3. What do you know of Poehl's spermin?
4. Kindly refer me to literature on this special subject.

F. NEUMANN, M.D., New York.

ANSWER.—1. Cases of complete cryptorchidism usually involve a failure of development of the interstitial cells of the testicles, which, it appears, are the effective agents in stimulating the development of the secondary sexual characters. While some remarkable effects are reported as the result of the use of testicular extracts, in other cases failures have been experienced, so that it is very doubtful whether it would be

possible to stimulate the development of the secondary characters in the case referred to. It must be remembered, however, that the boy has perhaps not yet entered the period of puberty, so that it is possible that the hope for development will be realized.

2. An extract of testicle is prepared by Armour & Co.

3. Poehl's spermin is a proprietary product said to be made from semen, for which extravagant claims are published. It appears to have received less attention of late than formerly.

4. The following articles may be consulted:

Kyrle, J.: Defective Development of Testicles, *Wien. klin. Wchnschr.*, Nov. 10, 1910; abstr., THE JOURNAL, Dec. 17, 1910, p. 2190.

Pappenheimer and Schwartz: Relation of the Interstitial Cells of Testicle to Its Internal Secretion, *New York State Jour. Med.*, December, 1910; abstr., THE JOURNAL, Jan. 21, 1911, p. 221.

Koch, K.: Interstitial Connective-Tissue Cells in the Testicle and Their Atrophy, *Virchows Arch. f. path. Anat.*, December, 1910.

Hanes, F. M.: Relation of the Interstitial Cells of Leydig to the Production of an Internal Secretion by the Mammalian Testicle, *Jour. Exper. Med.*, March, 1911.

Hanes, F. M., and Rosenbloom, J. A. Histologic and Chemical Study of the Fatty Matter of Normal and Cryptorchidic Testicles, *Jour. Exper. Med.*, March, 1911.

EYE, EAR, NOSE AND THROAT JOURNALS

To the Editor:—Kindly give me the names, addresses and other details of a number of periodicals on the eye, ear, nose and throat.

G. R. HAYS, M.D., Richmond, Ind.

ANSWER.—Following is a list of eye, ear, nose and throat journals, with addresses, frequency of publication, and price:

Annals of Otology, Rhinology and Laryngology. Quarterly; subscription $4 per year. Published by Jones H. Parker, Mermod-Jaccard Building, St. Louis.

Annals of Ophthalmology. Quarterly; subscription $4. Published by Jones H. Parker, Mermod-Jaccard Building, St. Louis, Mo.

Ophthalmic Record. Monthly; subscription $4 a year, single copy, 50 cents. Published by H. A. Fox, 7 West Madison Street, Chicago.

Journal of Ophthalmology and Oto-Laryngology. Monthly; subscription $2 a year. 32 North State Street, Chicago.

Ophthalmology. Quarterly; subscription $5. Published by H. V. Wardemann, 711-714 Cobb Building, Seattle, Wash.

Archives of Ophthalmology. Bimonthly; subscription $5, single copy, $1; Published by G. P. Putnam's Sons, 27 and 29 West Twenty-Third Street, New York.

LIQUID PETROLATUM IN CONSTIPATION

To the Editor:—What is the status of the use of liquid albolene or other petroleum product in the treatment of constipation? Is continued use safe? ROBERT E. GRAVES, M.D., Chicago.

ANSWER.—"Liquid albolene" is a proprietary name for a hydrocarbon oil corresponding to liquid petrolatum. Liquid petrolatum has been recommended in the treatment of constipation by Schmidt, but so far as we know it has not received much attention. Its action is supposed to be that of a lubricant which facilitates the passage of the feces along the canal. Pure petrolatum is quite insoluble in water, and so far as we know innocuous. It is to be remembered, however, that volatile hydrocarbons have distinctly poisonous properties and therefore such preparations should be free from volatile hydrocarbons and should be used with caution and in moderate doses. In view of the slight experience of the profession with this remedy, it must be regarded as in the experimental stage.

THE COMPOSITION OF ATOPHAN

To the Editor:—Can you give me any information regarding Atophan? I have been unable to find any mention of it in my files of THE JOURNAL. H. CRASSWELLER, M.D. Windsor, Ont.

To the Editor:—Please give me the formula or exact ingredients of Atophan, a proprietary medicine recommended and advertised for rheumatism and other diseases. I want this in plain English. I am not smart enough to figure out what carboxylic acid is. The other part I can figure out. Are any of these ingredients injurious to the eyes? F. M. HALBERT, M.D., Greenville, Miss.

ANSWER.—Atophan was described in the New and Nonofficial Remedies department of THE JOURNAL, March 2, 1912. It is included in the book: New and Nonofficial Remedies, 1913, p. 46, paper-bound copies of which will be sent on receipt of 25 cents.

Atophan is 2-phenyl-quinolin-4-carboxylic acid. That is, it is the basic substance, quinolin, into which a phenol and a carboxyl group has been introduced. The carbon atoms of the quinolin nucleus are numbered consecutively, the numbers "2" and "4" indicating the carbon atoms to which the groups are attached. The term "carboxyl" is a contraction of "carbonyl" and "hydroxyl," and the group COOH, which is characteristic of organic acids, may be considered as a combination of carbonyl and hydroxyl.

We know of no reports indicating that Atophan has any effect on the eyes.

UNILATERAL ABSENCE OF PERSPIRATION

To the Editor:—Please inform me what condition could produce a disappearance of sweat on one side of the body and what measure should be employed to cure it.

R. CABULLA, M.D., Santiago, Cuba.

ANSWER.—Perspiration is principally controlled by a bilateral center in the medulla oblongata. It is believed that there are also sudorific centers in the cortex and in the spinal cord. Disorders of secretion may occur in diseases of the brain, spinal cord, peripheral nerves and the sympathetic. We do not know what causes hyperhidrosis or anhidrosis. A hemihyperhidrosis unilateralis, that is, a perspiration on one side of the face or body only, occurs occasionally in normal persons, especially after the ingestion of mustard, pickles, etc.; and in diseases of the sympathetic, hemicrania, exophthalmic goiter, erythromelalgia, tabes dorsalis, gliosis and other nervous diseases. It is an isolated phenomenon of psychic degeneration and may result from an acute infectious fever. Naturally the treatment must be that of the underlying causes. Local application of astringents may be made, such as a solution of alum from 1 to 5 per cent., or a solution of formaldehyd, from 1 to 5 per cent.

HOW TO GIVE CASTOR OIL

To the Editor:—In THE JOURNAL (April 12, 1913, p. 1174), you give different methods of administering that old and much-maligned remedy, castor oil. For many years I have given it on ice-water. In this way you can give it to any one in the dark and the patient will be none the wiser until later. If the oil is poured into a small glass of ice-water the oil will form a globule on top of the water and will go down like a raw oyster. If any taste is left, a pinch of salt will remove it. The method is applicable to any oil, and has the advantage that often when a palatable drink is used, a distaste for that drink remains; but water is always good when one is thirsty. GEORGE F. BEASLEY, M.D., La Fayette, Ind.

IS THE RIGHT EYE BLIND IN RABIES?

To the Editor:—I was interested in the article on rabies by Dr. Wesson (THE JOURNAL, April 5, 1913, p. 1069), and since he mentions paralysis of the left side I would like to know if blindness of the right eye exists. I have heard it said from experience that if one turns out to the left when meeting a running mad dog, he will not bite. A. L., Kansas.

V. 60
1913

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

THE NEW OWEN BILL

On April 7, Senator Robert L. Owen introduced Senate Bill No. 1, a revised bill providing for a National Department of Health. The new bill follows the general plan of the last Owen bill, but goes back to the original plan for a department, rather than a bureau of health. The text, in full, follows:

A BILL TO ESTABLISH A DEPARTMENT OF HEALTH, AND FOR OTHER PURPOSES

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That there be at the seat of government an executive department known as the Department of Health, and a Secretary of Health, who shall be the head thereof; and the provisions of title four of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department. The Secretary of Health shall be appointed by the President, by and with the advice and consent of the Senate, at a salary of $— and with tenure of office like that of the heads of the other executive departments. And said Secretary shall cause a seal to be made for the Department of Health, of such device as the President approves, and judicial notice shall be taken of said seal.

SEC. 2. That there be in the Department of Health an assistant to the Secretary of Health, designated and known as the Commissioner of Health, who shall be a skilled sanitarian, appointed by the President, by and with the advice and consent

of the Senate, who shall serve at the pleasure of the President, and who shall receive a salary of $— per annum. The Commissioner of Health shall perform such duties as are required by law and such as are prescribed by the Secretary of Health. There shall be also a chief clerk, a disbursing clerk, and such other employees as Congress may from time to time authorize. The auditor for the state and other departments shall receive and examine all accounts of moneys paid in and of moneys expended on account of the Department of Health, and shall certify the balance arising thereon to the division of bookkeeping and warrants of the Treasury Department, and forthwith send a copy of each such certificate to the Secretary of Health.

SEC. 3. That it be the province and duty of the Department of Health to foster and promote all matters pertaining to the conservation and improvement of the public health and to collect and disseminate information relating thereto: *Provided*, That this act shall not be construed as attempting to authorize the Department of Health to exercise or attempt to exercise, without express invitation from the chief executive or other proper authority of the state, any function belonging exclusively to such state, or to enter any premises in any state without the consent of the owner or occupant thereof; but the Secretary of Health, on request of the chief executive or other proper authority of any state, territory, the District of Columbia, or any insular possession, may detail for limited periods an officer or officers, employee or employees, from the Department of Health to assist the health authorities of such state, territory, district, or insular possession in protecting and promoting the health of the people of such jurisdiction.

SEC. 4. That to the Department of Health are hereby transferred the following bureaus, divisions, and other branches of the government, and all that pertains to them, and they and each of them shall remain under the supervision and direction of the Secretary of Health until otherwise directed by law, namely:

(a) From the Department of the Treasury is transferred the Public Health Service.

(b) From the Department of Agriculture is transferred that part of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs, and liquors, and with the execution and enforcement of the Act of Congress entitled "An act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," approved June 30, 1906.

(c) From the Department of Commerce and Labor is transferred the Division of Vital Statistics, Bureau of the Census.

And the President is hereby authorized to transfer to the Department of Health at any time either the whole or any part, as to him may seem best, of any bureau, division, or other branch of the government engaged in work pertaining to the public health, except the Medical Department of the Army and the Bureau of Medicine and Surgery of the Navy.

And each and every function, authority, power, duty, and jurisdiction, of whatsoever character it may be, vested at the time of any transfer aforesaid in the head of the executive department from which said bureau, division, or other branch of the government is transferred, shall, to the extent to which such function, authority, power, duty, or jurisdiction pertains to such bureau, division, or other branch of the government immediately on such transfer become vested and thereafter remain vested in the Secretary of Health.

All land, buildings, furniture, apparatus, equipment, and property of whatsoever description, and all official records and papers, in the custody of any executive department from which any bureau, division, or other branch of the government is transferred as aforesaid and pertaining to the business of such transferred bureau, division, or other branch of the government, shall at the time of such transfer, or as soon thereafter as practicable, and in so far as such action can be taken without hindering the work of the executive department from which such transfer is made, be given over into the custody of the Department of Health. And all unexpended balances of appropriations available at the time of such transfer for the use of any such transferred bureau, division, or other branch of the government, or which may become available thereafter, shall be and remain available, in similar manner and to the same extent as if no transfer had been made.

SEC. 5. That within the Department of Health there shall be the following bureaus:

(a) Bureau of Sanitary Research; (b) Bureau of Child Hygiene; (c) Bureau of Vital Statistics and Publications; (d) Bureau of Foods and Drugs; (e) Bureau of Quarantine; (f) Bureau of Sanitary Engineering; (g) Bureau of Government Hospitals; (h) Bureau of Personnel and Accounts. And the Secretary of Health is hereby authorized to arrange and rearrange from time to time, with the approval of the President, the functions, duties, personnel, papers, records, and property, and the work, resources, and equipment generally, coming into the jurisdiction and control of the Department of Health by the operation of this act, so as most efficiently and economically to organize and maintain the several bureaus herein named and such divisions and offices thereof as to said secretary seems proper; but in arranging and rearranging the personnel, the rank, pay, and allowances of the officers of the Public Health Service commissioned at the time of the transfer of that service to the Department of Health shall not, by reason of anything in this act contained, be diminished. And the Secretary of Health may call on the heads of other executive departments for information in their possession whenever such information is needed for the efficient and economical working of the Department of Health.

SEC. 6. That the President is hereby authorized to detail officers and employees from any of the several executive departments of the government for duty under the Secretary of Health when so requested by said secretary, and to detail officers and employees in the service of the Department of Health to any of the other executive departments on request of the head of such department, provided such detail can be made without prejudice to the public service, to carry into effect the purpose and intent of this act; but officers and employees so detailed shall receive no additional compensation, but shall be paid such actual and necessary expenses as they incur in the discharge of their duties.

SEC. 7. That the Secretary of Health may, in his discretion and with the approval of the President, appoint an advisory board of not more than seven members, to confer with him on his request, from time to time as he deems necessary, concerning the work of the Department of Health and the health of the people. The members of said board shall be selected because of their special knowledge of matters relating to the public health, and each shall hold office for a term of seven years or until his successor is appointed, except that the appointments first made, and appointments thereafter made to fill unexpired terms and terms of members who have held over beyond the periods of their original appointments, shall be made so that not more than one member shall retire during any one fiscal year. No member of any such advisory board shall receive any compensation for his services, but each shall be paid all actual expenses necessarily incurred in the discharge of his duties. And from and after the passage of this act the advisory board for the Hygienic Laboratory created by section 5 of an act entitled "An act to increase the efficiency and change the name of the United States Marine-Hospital Service," approved July 1, 1902, be, and the same hereby is, abolished.

SEC. 8. That the Secretary of Health may, whenever in his judgment public interests would be promoted by so doing, invite the duly constituted health authorities of all or of any of the states, territories, the District of Columbia, and insular possessions as to him may seem advisable, each to send one delegate to confer with him or his duly appointed representative or representatives and with each other, at such time and place as he may designate, concerning any particular matter or matters relating to the public health; and it shall be the duty of the Secretary of Health, on the written application of the duly constituted health authorities of not less than five states, territories, the District of Columbia, or insular possessions, stating the particular matter or matters which it is desired to consider, to appoint a time and place, and to call a conference of the health authorities of the states, territories, the District of Columbia, and insular possessions that united in the request therefor, and personally or through his duly appointed representative or representatives to be present at such conference; but every state, territory, the District of Columbia, and insular possession shall be notified of every conference, and if practicable be afforded an opportunity of being present and participating in its proceedings. And from and after the passage of this act annual and other conferences of state and territorial boards of health, quarantine authorities, and state health officers, provided for by section 7 of an act entitled "An act to increase the efficiency and change the name of the United States Marine-Hospital Service," approved July 1, 1902, be, and the same are hereby, abolished.

SEC. 9. That, except as expressly provided in this act, nothing herein contained shall be construed as limiting or abrogating any function, right, or duty imposed by law on any existing bureau, division, or other branch of the government; but such bureaus, divisions, and other branches of the government

as are by this act or by authority thereof transferred to the Department of Health shall continue, under direction of the Secretary of Health, to have such functions, duties, and rights as they have at the time of such transfer; and in the case of such bureaus, divisions, and other agencies of the government as are transferred in part only, the part not transferred shall continue to have and to exercise all such functions, duties, and rights, except such as specifically relate to the part transferred to the Department of Health, in the same manner and to the same extent as if no such transfer had been made.

SEC. 10. That the Secretary of Health shall annually submit to Congress a report in writing showing the operations of the Department of Health during the last preceding fiscal year, which report shall give an account of all moneys received and all moneys disbursed on account of such operations. He shall make such other reports from time to time as may be required by the President, or by either house of Congress, and such as are in his judgment necessary or expedient.

SEC. 11. That $—— be, and the same are hereby, appropriated to carry into effect the provisions of this act, out of any money in the Treasury not otherwise appropriated.

SEC. 12. That all acts and parts of acts contrary to the provisions of this act or inconsistent therewith be, and the same are hereby, repealed.

SEC. 13. That this act shall take effect on and after July 1, 1914.

TARIFF ON INSTRUMENTS

The Jefferson County (Ky.) Medical Society recently passed the following resolutions:

WHEREAS, The President of the United States has called Congress into special session, the chief end in view being a revision of the tariff downward; and

WHEREAS, There exists on finished surgical instruments imported into this country a duty of 50 per cent.; instruments in the rough are admitted with a duty of 15 per cent., while scientific instruments and apparatus for teaching are admitted free; and

WHEREAS, This condition puts an unnecessary tax on all physicians in the purchase of their instruments, either domestic or foreign, which is both unjust and unnecessary; be it

Resolved, That we, the members of the Jefferson County Medical Society, respectfully petition the Congress of the United States now in session assembled, through our representative Honorable Swager Sherley, to remedy this condition through a bill introduced by Mr. Sherley taking the duty off of the aforesaid articles; since we feel that if instruments used only for teaching are admitted duty free it is all the more essential that instruments used in the practice of surgery for the purpose of saving human life and alleviating human suffering should be accorded like privilege; and, be it further

Resolved, That a copy of these resolutions be sent to our representative, respectfully asking that he at once adopt measures toward the desired end, that another copy of these resolutions be sent to the American Medical Association with the request that the above resolution be given wide-spread publicity in the pages of THE JOURNAL with the request that all the doctors in the United States, through their county societies, join with the Jefferson County Medical Society in requesting their representatives in Congress to endorse the above mentioned legislation.

DUNNING S. WILSON, President.
A. C. L. PERCEFULL, Secretary.

700 Acherton Building, Louisville, Ky.

Medical Inspection of Schools.—Medical inspection ought to emphasize in a decided way the especial significance of hygienic conditions in schools. It seems more than foolish to shut up our well children in unventilated and improperly lighted schoolrooms; furnish them no playgrounds, compel them to live a life not in accord with the laws of physical development, and then when they become anemic, near-sighted, and defective make a great stir about special classes for defectives and spend in building special schools money better spent in keeping children well. We must learn that it is far more important to furnish conditions which promote the health and development of well children than it is to make special efforts to care for those who are sick or defective, especially where these defects have been largely induced through neglect.—*Public Health*, Michigan.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, May 13-14. Sec., Dr. F. T. Murphy, Brinkley; Eclectic, Little Rock, May 13. Sec., Dr. C. E. Laws, Fort Smith.

FLORIDA: Jacksonville, May 12-13. Sec., Dr. J. D. Fernandez.

GEORGIA: Regular, State Capitol, Atlanta, May 8-10. Sec., Dr. C. F. Nolan, Marietta; Homeopathic, Atlanta, May 8. Sec., Dr. R. E. Hinman, 106½ Whitehall Street.

ILLINOIS: Armory Battery B, Chicago, April 29-May 1. Acting Secretary, Amos Sawyer, Springfield.

LOUISIANA: Homeopathic, 702 Macheca Bldg., New Orleans, May 5. Sec., Dr. Edward Harper.

MASSACHUSETTS: State House, Boston. May 13-15. Sec., Dr. Walter P. Bowers, Room 159, State House.

MICHIGAN: Y. M. C. A. Bldg., Detroit, May 22-24. Sec., Dr. B. D. Harison, 504 Washington Arcade.

NEBRASKA: Lincoln, May 28-29. Sec., Dr. C. P. Fall, Beatrice.

NEVADA: Carson City, May 5. Sec., Dr. S. L. Lee.

Connecticut Homeopathic March Report

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, March 11, 1913. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. Only one candidate, a graduate of the Hahnemann Medical College and Hospital of Philadelphia, 1892, was examined and he passed with a grade of 76 per cent.

Montana April Report

Dr. William C. Riddell, secretary of the Montana State Board of Medical Examiners, reports the written examination held at Helena, Mont., April 1-3, 1913. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 27, of whom 22 passed and 5 failed. The following colleges were represented:

PASSED College	Year Grad.	Total No. Examined
Northwestern University Medical School, (1906) (1908)	(1911,2)	4
College of Physicians and Surgeons, Chicago (1898)	(1903,2)	3
Hahnemann Medical College and Hospital, Chicago	(1896)	1
Dunham Medical College, Chicago	(1898)	1
Drake University, Des Moines	(1911)	1
Michigan College of Medicine and Surgery	(1901)	1
University of Minnesota, School of Medicine	(1899)	1
Washington University, St. Louis	(1904)	1
Creighton Medical College	(1911)	1
New York Homeopathic Medical College and Hospital	(1910)	1
Medical College of Ohio	(1907)	1
Hahnemann Medical College and Hospital, Philadelphia	(1907)	1
Vanderbilt University	(1912)	1
Milwaukee Medical College	(1903)	1
Laval University, Quebec	(1904)	1
University of Toronto, School of Medicine (1904) (1906)		2

FAILED College	Year Grad.	Per Cent.
Georgetown University	(1903)	67.1
College of Physicians and Surgeons, Chicago	(1910)	69.4
Keokuk Medical College, Coll. of Phys. and Surg.,	(1908)	61.5
Milwaukee Medical College	(1910)	68.5
Wisconsin College of Physicians and Surgeons	(1905)	65.4

Rhode Island April Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, April 3, 1913. The total number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 5, all of whom passed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Baltimore	(1912)	88
Harvard Medical School	(1908) 86.8; (1910)	83.7
Cornell University Medical College	(1908)	89.8
University of Vermont	(1911)	81.8

V. 60
1913

Book Notices

THE QUALITATIVE ANALYSIS OF MEDICINAL PREPARATIONS. By H. C. Fuller, B.S., Chief Analyst, Institute of Industrial Research, Washington. Cloth. Price, $1.50 net. Pp. 132. New York: John Wiley & Sons, 1912.

The great diversity in the nature of medicinal substances renders it impossible to devise any routine scheme of analysis for medicines which is both brief and practical. This is particularly the case in a volume of this size. Then, too, the analysis of medicines is such a complex subject and one that requires so much patience and skill acquired from experience that no manual of directions, however complete, can make a competent analyst from an amateur. This work, however, makes no claim to attempt the impossible. The author's analytical scheme resembles the earlier methods of Dragendorff and Parsons for plant analysis, in that an endeavor is made to separate the organic medicines into groups by successive treatments with various solvents in acid and alkaline mediums. After the group separations are made the individual substances are identified by appropriate tests compiled from the literature. The book should prove useful as a time-saver in making cursory examinations of remedies, and will doubtless be found valuable in teaching short courses in drug analysis.

ANLEITUNG ZUR FUNKTIONSPRÜFUNG DES OHRES (Prüfung des Gehör- und Gleichgewichtsapparates). Für die Praxis dargestellt. Von Dr. A. Sonntag und Dr. H. J. Wolff. Mit einem Vorwort von Prof. Dr. G. Brühl. Paper. Price, 2.50 marks. Pp. 69. Berlin: S. Karger, 1912.

This is a treatise on the methods of testing the organ of hearing, including its functions of hearing and equilibration. In addition, sufficient attention is given to the physiology to render plain the results of comparatively recent investigations which make possible some new and important tests. The hearing tests are classified into those which test the condition of the sound-conduction apparatus and those testing the condition of the sound-perceiving apparatus. The methods of using speech, noises and tones as hearing tests are given in detail and the value of each is indicated. The particular value of this work is in the discussion of the physiology of the vestibular apparatus and the methods of testing the function of these end-organs. The subject of nystagmus is carefully considered, dealing with both spontaneous and experimental nystagmus. The methods of using caloric, pressure, galvanic and turning tests are fully and lucidly explained, and finally a diagnostic table summarizes the symptoms of labyrinthitis.

A METHOD OF MEASURING THE DEVELOPMENT OF THE INTELLIGENCE OF YOUNG CHILDREN. By Alfred Binet and T. Simon. Authorized Translation With Preface and an Appendix Containing an Arrangement of the Tests in Age and Diagnostic Groups for Convenience in Conducting Examinations. By Clara Harrison Town, Ph.D., Director of the Department of Clinical Psychology, Lincoln State School and Colony, Lincoln, Ill. Paper. Price, $1. Pp. 83. Lincoln, Ill.: The Courier Company, 1912.

Interest in the study of the backward child has called attention to the mental tests devised by Binet and Simon for the grading of such children, which seems to be the most practical of any of the few methods devised for this purpose. The translator in this little pamphlet has presented the method of Binet and Simon in a compact and practical form which should prove convenient for those interested in this work.

PAPERS ON PSYCHO-ANALYSIS. By Ernest Jones, M.D., M.R.C.P., Associate Professor of Psychiatry, University of Toronto. Cloth. Price, $4 net. Pp. 432. New York: William Wood & Co., 1913.

English readers wishing to gain an insight into the theory and practice of psychanalysis as promulgated by Sigmund Freud will find this series of papers extremely helpful and interesting. The author has long been known as an ardent admirer and faithful disciple of Freud; in fact, he may be said to be even more Freudian than Freud himself. The papers have all been published in journals, but their reproduction in one volume will be welcomed by many. The author's style is facile, and he writes with the power of conviction.

Medicolegal

Validity of State Law Prohibiting Shipment of Immature Citrus Fruits

(Sligh vs. Kirkwood, Sheriff (Fla.), 61 So. R. 185)

The Supreme Court of Florida affirms a judgment refusing to release the plaintiff in error on habeas corpus proceedings after his arrest on warrants issued from informations charging him with violations of the Florida act of 1911, making it unlawful for anyone to sell, offer for sale, ship or deliver for shipment any citrus fruits which are immature or otherwise unfit for consumption, and for anyone to receive any such fruits under a contract of sale, or for the purpose of sale, or of offering for sale, or for shipment or delivery for shipment, etc. The court holds the statute constitutional. It says that it does not think that the statute conflicts with the interstate commerce clause of the federal constitution or with any of the provisions of acts of congress passed in pursuance thereof that have come to the court's attention. The court does not think the statute a direct interference with interstate commerce or a burden on or prohibition against the legitimate subjects of such commerce. It does incidentally affect such commerce by prohibiting immature citrus fruits produced within her borders from becoming the subjects of shipment or sale, and this in obedience to the police duty and power to protect the public health. Except thus incidentally, the court does not think that the act is an unwarranted interference with or burden on interstate commerce. Nor does the statute in any wise conflict with the Food and Drugs Act of Congress of June 30, 1906. By the sixth subdivision of section 7 of the last-named act, the prohibitions against vegetable substances, which, as the court interprets it, would include citrus fruit, is that if it is in whole or in part filthy, decomposed or putrid, then it is debarred as a subject of commerce. Green or immature fruit may be as deleterious to health as the same fruit in an overripe or decomposed state. The act of congress debars the latter, but says nothing as to the former, thus leaving the field of deleterious immaturity of fruit open to be dealt with by the states. It is not enough to render the state law invalid that it is similar to the federal act on the same subject. Where both the acts of congress and of the state make a defined act an offense, the commission of the act may be an offense against each, and punishable by each.

Liability to Occupation Tax After Exemption

(State ex rel. Wilson vs. City of Pensacola (Fla.), 61 So. R. 193)

The Supreme Court of Florida affirms a judgment in favor of the city in this action, brought by the state attorney for the first judicial circuit to test the power of the city to impose a revenue license tax on the physicians and surgeons practicing their profession within the corporate limits of the city. The court holds that the city of Pensacola may impose an occupation tax on physicians and surgeons practicing their professions within that municipality. And, more generally, it holds that an act exempting physicians and surgeons from an occupation tax may be repealed by a subsequent legislature in a general license law. The failure of the legislature to tax, for state purposes, an occupation exempted by a previous legislature from taxation does not prohibit taxation by municipalities, authorized by the later act to tax for municipal purposes all occupations not mentioned therein.

The court says that the legislature of Florida in 1905 passed an act exempting regular practicing physicians and surgeons from the payment of any license tax. In 1907 a general law was passed imposing licenses and other taxes, which law mentions numerous businesses, professions, or occupations, but does not mention physicians and surgeons. In 1909 the legislature passed an act supplementary to the then existing Pensacola charter, and extending its powers, but which did not limit or cut down the power to impose the tax authorized under the general act of 1907. The state must be given a liberal range in reaching out after the means for its maintenance; and exemptions, not amounting to a vested right, are not lightly

to be treated as fixed and irrevocable. The exempting act had not become a fixed policy of this government; in fact, it barely became a law, not having received the active assent of the governor, who permitted it to become a law without his signature; and to receive the legislative assent apparently required a concession, in that its effectiveness was postponed beyond the usual time. At the next session of the legislature, while it did not impose for state purposes a license tax on physicians and surgeons, as it did do in 1903, it remitted, by express directions to counties and incorporated cities and towns, the power to impose a license tax on any profession not mentioned in the act. The condition before the court was that the legislature, having exempted the profession of physicians and surgeons in 1905, failed or refused in 1907 to continue that exemption, when conferring on municipalities the power to tax; and to this extent the general repealing clause, if needed for the construction of that act, repealed the former exemption enjoyed for a brief period by that honored profession. The title to the general act of 1907 put the world on notice that the legislature was dealing with the subject of occupation taxes; and it was wholly unnecessary to place therein the cognate subsidiary matter, properly connected therewith, that the act might affect previous exemptions.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

April, V, No. 4, pp. 285-344

1. Study of Meterachisis (Spina Bifida Occulta). B. Joseph, Burlington, Vt.
2. *Protein Milk as Corrective of Digestive Disturbances. H. B. Wilcox and M. C. Hill, New York.
3. *Protein Metabolism in Infants Fed on Protein Milk. B. R. Hoobler, New York.
4. Complement Fixation Test in Management of Gonococcus Vulvovaginitis. G. G. Smith, Boston.
5. Diphtheria Septicemia, Report of Case. E. Morgan, New York.

2. Protein Milk for Digestive Disturbances.—Summarized, the authors' points are:

Protein milk is essentially a therapeutic agent. It is not suitable for use as a continued diet. It is suitable for use at all ages, but better adapted to children over 3 months. It is indicated in gastric or intestinal indigestions, acute infections or chronic incapacities, fermentations or putrefactions. It is of the greatest therapeutic efficiency when made from skim-milk. It is best used without preliminary starvation or purgation. It may be used in combination with any plain milk mixture. Children may be abruptly changed from it to plain milk formulas without danger. It should be partially withdrawn with the first signs of digestive improvement. It should be replaced by suitable milk formulas as fast as the patient's tolerance will admit. Fresh milk and breast milk, when taken badly alone, are often well borne if combined with protein milk. Caloric values of the food may be more rapidly increased when some protein milk is given. Protein milk is especially indicated in acute intestinal infections.

3. Protein Metabolism in Infants Fed on Protein Milk.—Hoobler states that the clinical advantages of protein milk as a corrective for diarrheal conditions in infants are confirmed by the following metabolic findings: The protein intake is not increased sufficiently to be a detriment to the child, but on the other hand frequently supplies only a sufficient amount to make up for the previous protein depletion. When kept on this high protein intake for but a short period, the specific dynamic action of protein may be disregarded. Even though the food be low in caloric value, and while there may be loss of weight, there is nevertheless sufficient protein retained to prevent waste of muscle-tissue and provide for growth. The changes in the stools accompanying protein milk feeding are due to a decrease in the total acidity in the stool, the volatile acids, the fatty acids, an increase in the formation of soaps, a decrease in the amount of water lost through feces and a better retention of the mineral salts. All of the above factors tend to produce fewer stools through lessened irritability and formed stools through the reduction of water and the formation of soaps. These chemical results may all occur within the space of three or four days, and confirm the clinical observation that in many cases protein milk may be discontinued at the end of a very short period, thus using it as a corrective for diarrheal conditions only and not as a true food.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

April, LXVII, No. 4, pp. 649-848

6. *Influence of Ovary as Organ of Internal Secretion. W. P. Graves, Boston.
7. Intestinal Obstruction. A. B. McConnell, San Francisco.
8. Extra-Uterine Pregnancy: Operation Three Months After Term; Recovery. W. S. Smith, Baltimore.
9. Pros and Cons of Specialism. D. C. Moriarta, Saratoga Springs, N. Y.
10. Alpha and Omega of Digestive Tract in New-Born Child. D. H. Stewart, New York.
11. Hysterectomy for Cure of Prolapse of Uterus. W. A. B. Sellman, Baltimore.
12. Properitoneal Hernia. W. C. G. Kirchner, St. Louis.
13. Tuberculosis in Its Relation to Pregnancy, Labor and Puerperium. R. W. Lobsnstine, New York.
14. Delivery by Breech, with Special Reference to Technic. A. J. Skeel, Cleveland.
15. Surgery of Liver and Bile Tract. J. G. Sherill, Louisville, Ky.
16. Nephrectomy for Polycystic Condition of Kidney. G. Torrance, Birmingham, Ala.
17. Toxemias of Pregnancy. H. E. Tuley, Louisville, Ky.
18. Preservation and Repair of Female Perineum. S. J. Goodman, Columbus, O.
19. Function of Thymus. A. E. Lampé, Halle, Germany.

6. Influence of Ovary as Organ.—The present status of our knowledge concerning the physiology of the ovary, Graves says, justifies the following conclusions:

1. Anatomic evidence makes it probable but not incontestable that the ovary is an organ of internal secretion. 2. Infantilism is not a result of ovarian deficiency but is a local or general manifestation of a hypoplastic constitution in which the ovary may or may not share incidentally. 3. After sexual maturity the ovary exercises a trophic influence over the other internal and external genital organs. 4. There is evidence to show that the ovaries preside over menstruation by an internal secretion which has a selective action on the endometrium; and that abnormal uterine bleeding may be due to a hypersecretion of the ovaries. This evidence is not incontestable. 5. Transplantation of ovarian tissue has not as yet proved to be of great practical value in the surgical treatment of gynecologic patients. 6. Castration of sexually mature women directly causes vasomotor symptoms typified by hot flashes in 80 per cent. of cases. 7. Definite psychoneuroses are not directly caused by castration, but such symptoms if present are due to other causes that produce physical or mental pain or discomfort 8. Ovarian extract is invaluable in the treatment of the vasomotor disturbances following castration. Its value in the treatment of other gynecologic conditions is problematic.

Annals of Surgery, Philadelphia

April, LVII, No. 4, pp. 449-592

20. *Congenital Internal Hydrocephalus. I. S. Haynes, New York.
21. *Effect of Removal of Hypophysis Cerebri in Dog. J. E. Sweet and A. R. Allen, Philadelphia.
22. Consecutive Displacement of Cerebral Hemisphere in Localization and Removal of Intracerebral Tumors and Hemorrhages (Apoplectic Hemorrhages and Clots). W. H. Hudson, Atlanta, Ga.
23. *Coexisting Infection and Sarcoma of Thyroid. M. F. Porter, Fort Wayne, Ind.
24. *Experimental Devascularization of Intestine with and without Mechanical Obstruction. J. S. Horsley and C. C. Coleman, Richmond, Va.
25. *Surgery of Single and Horseshoe Kidney. C. H. Mayo, Rochester, Minn.
26. *Embryogenetic Relationships of Tumors of Kidney, Suprarenal and Testicle. L. B. Wilson, Rochester, Minn.
27. Excision and Suture in Treatment of Dense, Close, Urethral Strictures. C. G. Cumston, Boston.
28. *Operative Fixation as Cause of Delay in Union of Fractures. J. B. Roberts, Philadelphia.
29. *Treatment of Volkmann's Contracture. E. G. Alexander, Philadelphia.
30. Infections of Hand. L. W. Hoon and G. J. Ross, Philadelphia.

20. Congenital Internal Hydrocephalus.—The correctness of the principle of this operation (also published in the *Archives of Pediatrics* and abstracted in THE JOURNAL, March 22, p. 940), is again emphasized by Haynes. He reports two cases in which the procedure was employed unsuccessfully, but both cases, he believes, show that his theory is correct.

21. Removal of Hypophysis.—In summing up their experience with twenty-two dogs, the authors state that it is evident that the hypophysis is not essential to life; there are undoubtedly three well-marked changes which follow hypophysectomy;

V. 60
1913

the first change concerns the pancreas. They have not worked very extensively with the question of sugar tolerance, and therefore have nothing to say on that point. The second change is the atrophy of the testicles, which is of very early appearance, being extremely marked by the end of the second week after operation. Whether or not this atrophy can be compensated for by the function of some part left behind or of some glandular rests which have been described by Cushing in the floor of the sella turcica, the authors are unable to say. Increase in weight is of late appearance, and whether it be due to the loss of the hypophysis primarily or due to the secondary atrophy of the testicle is not at all clear in their minds.

Their results agree with the most recent work on the subject reported by Aschner, except perhaps in two particulars. He worked almost exclusively with young animals, and inclines to the belief that the removal of the hypophysis from the adult dog is without effect. In the second place he ascribes the atrophy of the testicles to injury of the tuber cinereum. This point of view seems to Sweet and Allen a purely academic one. There can be no agreement as to where tuber cinereum ends and infundibulum begins. They have found no evidence whatever in their work which would incline them to agree with Aschner in this particular.

23. Abstracted in THE JOURNAL, January 25, p. 316.

24. **Devascularization of Intestine.**—The authors add two experiments to ten previously reported in THE JOURNAL, Aug. 24, 1912, p. 597.

25 and 26. Abstracted in THE JOURNAL, January 18, pp. 236 and 237.

28. **Delay in Union of Fractures.**—Roberts reports a case of apparent interference with union by operative fixation with a metal plate to maintain coaptation of the fragments after a difficult reduction. He has also gone over the recently expressed opinions of surgeons doing this kind of work. He pleads for caution against the enthusiastic adoption of this method of treatment as a routine means of dealing with closed fractures. The profession and the public should know that while it is a necessity in some cases and its adoption a question of judgment in other cases, there are many instances of subcutaneous or closed fracture in which it is not needed. Good results can often be obtained, both as to anatomic restoration of the parts, good function and rapid cure, by external dressings guided by a thoughtful, careful surgeon, who has a mechanical mind and anatomic knowledge. The operative treatment is particularly dangerous when adopted by novices in aseptic surgery, or in places where complete aseptic surroundings cannot be obtained.

29. **Treatment of Volkmann's Contracture.**—Alexander reports two patients who were treated by mechanical means, electricity and massage. One case was of short duration, the other had existed for several months. The first patient was treated on a splint, electricity and massage were given every other day, and the splint gradually extended. At the end of twelve weeks the patient was discharged from the hospital cured, with good supination and pronation of the forearm, flexion and extension of the wrist and fingers. The second patient, treated like the first, in about three months' time was able to flex and extend the fingers and wrist. Although he has good wrist and finger motion, he still shows atrophy of the muscles of the forearm and hand. Sensation in the hand is apparently normal. The only difficulty encountered in the treatment of these two patients was superficial pressure ulceration of the finger tips. This difficulty was overcome by placing pads under the finger tips and "making haste slowly" with the extension.

The apparatus used in treating the two patients reported consists of two parts. Part 1 consists of a leather casing encircling the lower half of the forearm. The casing is reinforced on each side (radial and ulnar) by a steel bar. A semicircular bar at the upper end extends around the flexor surface from the radial to the ulnar bar. The casing is buckled on the extensor side of the forearm. Part 2: A plate covered with leather is fitted to the palm of the hand and fingers. Extending from one side of the plate to the other, on the dorsal aspect, is a wide leather strap to hold the fingers straight and in position. Two bars attached in front on either side of the plate pass backward, the one on the radial side arching much more than the ulnar one, to join at the wrist the radial and ulnar bars described in Part 1. The joint formed by the union of these bars is provided with a lever and quick screw. Two long leather straps, attached in front at the junction of the plate and bars, pass backward, crossing on the dorsum of the wrist, and are attached to the radial and ulnar bars, just in front of junction of these bars with the semicircular one. These straps, and also the broad finger strap, are so arranged that they can be adjusted to fit the case. The apparatus can be varied to suit the case. The apparatus is applied with the hand strongly flexed and the fingers extended as much as possible. By turning the screws the plate is elevated and the hand and fingers extended.

Bulletin of Johns Hopkins Hospital, Baltimore

April, XXIV, No. 266, pp. 103-134

31 Tuberculosis of Urinary System in Women. E. H. Richardson, Baltimore.

32 Effect of Chemical Treatment on Baltimore City Water. W. W. Ford and E. M. Watson, Baltimore.

33 Certain Dangers of Adenoidectomy. W. E. Grove, Milwaukee, Wis.

34 *Transplantation of Rib Cartilage Into Pedunculated Skin Flaps: Experimental Study. J. S. Davis, Baltimore.

35 Dengue, Its History, Symptomatology and Epidemiology. E. R. Stitt, Washington, D. C.

34. **Transplantation of Rib Cartilage.**—A flap of the required size with either a broad or narrow base was outlined by Davis and raised from its bed. It was then folded on itself, raw surface to raw surface, so that there was skin on both sides. The edges were held together with several sutures. In this way a sort of pouch was formed and into a selected portion of this pouch the cartilage was placed and secured. The long flaps, with narrow bases, were dressed with gauze moistened with normal salt solution, and each was protected from pressure by a molded wire cage which was secured by a bandage. The short flaps, with broad bases, were in a number of instances exposed to the air without dressings.

The cartilage was obtained from the cartilaginous ribs. The perichondrium was not disturbed except where shaping was done. The cartilage was either imbedded in a thin layer of subcutaneous fat, or was placed in a pocket burrowed in the subcutaneous tissue itself, or was surrounded by the skin after the subcutaneous tissue had been removed. The location of the cartilage varied in the different flaps. In some it was placed parallel to the base of the flap, either in the distal, intermediate or proximal portions. In others, it was placed vertically to the base, and in different parts of the flap. In still others it was placed diagonally across the flap. The shape of the cartilage varied. In some of the experiments it was inserted in its natural shape, and in others it was cut and moulded into the desired form. The flaps when completed were either appendix-shaped, square, or rectangular, some of the latter having a broad and some a narrow base. Pieces of cartilage from 1.5 to 7 centimeters in length were used. The cartilage was allowed to remain in the flaps from seven to 120 days. In two instances where infection occurred the wounds were quickly brought into healthy condition, and the cartilage saved, by the free use of tincture of iodin. In one experiment the cartilage was accidentally contaminated before transplantation, but after being dipped in the iodin solution it was placed in the flap, and *per primam* healing followed.

The appendix-shaped flaps containing cartilage, which were long and had comparatively narrow bases, were the least likely to be completely successful. The broad-based flaps, on the other hand, were nearly always successful throughout. In several instances the cartilage transplanted in the flaps was obtained from other dogs, and these pieces were apparently as well nourished and gave as satisfactory results as those from the same animal. The cartilage should be securely, but loosely, anchored in position. If there was pressure on any particular portion of the cartilage, as for instance by a tightly drawn suture, there was usually slight liquefaction and subsequent fracture of the cartilage at that point. Macroscopic examina-

tion showed in every instance that the squarely cut ends of the transplanted cartilage had become slightly rounded. The healing was reactionless and the cartilage did not act as a foreign body.

The measurements of the cartilage when removed from the flap differed very little, if at all, from those taken at the time of transplantation. On section the cartilage appeared normal and seemed well nourished. Microscopic examination showed the transplanted cartilage surrounded by a loose connective tissue zone containing blood-vessels, which were more or less abundant, according to the length of time after transplantation. The cartilage cells appeared normal and there were no signs of degeneration or absorption. This series of experiments show that cartilage with its perichondrium may be transplanted successfully into flaps of the desired shape, with skin on both sides, so long as the blood supply is sufficient to nourish the flaps. The cartilage may also be cut and molded into any required form to support the flap.

Bulletin of Lying-in Hospital of City of New York

March IX, No. 1, pp. 1-65

36 Temporal Bone and Its Anomalies at Birth in 150 Cases. C. A. Frelich, New York.
37 Infant Temporal Bone in Its Relation to Mastoid Operation. H. B. Brown, New York.
38 Does the Average Midwife Meet Requirements of Patient in Confinement? G. W. Kosmak, New York.
39 When Is High Forceps Operation Justifiable? J. A. Harrar, New York.
40 Immediate Treatment of Depressed Fractures of Skull in New-Born. G. W. Kosmak, New York.

Boston Medical and Surgical Journal

April 10, CLXVIII, No. 15, pp. 525-560

41 Conduct of Labor Without Vaginal Examinations. C. M. Green, Boston.
42 *Diabetes in Infancy and Childhood. J. L. Morse, Boston.
43 Bilateral Subclavian Aneurysms. H. A. Lothrop, Boston.
44 Follow-Up Work as Element of Effective Treatment in Out-patient Clinic for Eye Diseases. E. Hartshorn and M. M. Davis, Boston.
45 Progress in Diagnosis and Treatment of Intussusception. W. E. Ladd, Boston.

42. Diabetes in Infancy.—The literature of this subject is reviewed by Morse and nineteen personal cases are added. There was a history of diabetes in the family of six, or 31 per cent. of these patients. A history of long-continued excessive consumption of sugar was present in six cases. Polyuria was the first symptom noted in five of seventeen patients over 2 years of age. Enuresis was the first symptom noted in four, excessive thirst in three, emaciation in three, quietness in one and disturbance of vision in another. Polyuria was noticed in all. Polydypsia was, however, noted in but thirteen. Emaciation was also noted in thirteen. Only nine were constipated. A large appetite was noted in six, while loss of appetite was noted in three. Enuresis was present in five and irritation and itching of the external genitals in four. Itching of the skin was mentioned in but one case. Three were nervous, two were quiet, one suffered from headaches and one had trouble with vision. About two-thirds of the cases were of the severe type. The duration in twelve patients over 2 years old was six weeks, two months, five months, seven months, seven months, twenty-one months and twenty-eight months, respectively. Three patients are still alive, two months, eleven months, and twenty-eight months, respectively, after the onset of symptoms. All of these have sugar in the urine. The result is not known in the other two.

California State Journal of Medicine, San Francisco

April, XI, No. 4, pp. 135-172

46 Rational Psychotherapy. H. C. McClenahan, San Francisco.
47 Psychotherapy in Sexual Neurasthenia. V. Veckl, San Francisco.
48 Psychiatric Duties of Large Cities. R. L. Richards, Burkesville, Ky.
49 Are We Doing as Much for the Tuberculous Patient as We Should? F. M. Pottenger, Monrovia.
50 Interauricular or Interventricular Deficiency of Septum? A Question of Diagnosis. W. W. Kerr, San Francisco.
51 Prospects and Retrospects. A. Barkan, San Francisco.
52 Granuloma Inguinale Tropicum. D. Friedlander, San Francisco.
53 Occipito-Posterior Position. L. I. Breitstein, San Francisco.
54 Present Knowledge of Vermiform Appendix. C. J. Teass, San Francisco.
55 Treatment of Fractures of Patella. R. Brown, Santa Barbara.

Cleveland Medical Journal

March, XII, No. 3, pp. 161-232

56 When Man Had a Hole in His Humerus. F. D. Snyder, Ashtabula, Ohio.
57 Effects of Aortic Compression on Circulation. T. Sollmann and J. D. Pilcher, Cleveland.
58 Radical Treatment of Uterine Fibroids Based on Their Association with Malignancy. R. E. Skeel, Cleveland.
59 Some Common Diseases Mistaken for Tuberculosis and Their Consideration. J. C. Placak, Cleveland.
60 Difficulties in Diagnosis of Gall-Stones. F. E. Bunts, Cleveland.
61 *Influence of Lipoids on Hemolysis. J. D. Pilcher, Cleveland.
62 *Clinical Results of Nasal Treatment in Asthma. W. J. Abbott, Cleveland.
63 Organization of Medical Schools. C. F. Thwing, Cleveland.
64 Duodenotomy for Removal of Impacted Sewing-Machine Needle. J. J. Buchanan, Pittsburgh.

57. Aortic Compression.—Compression of the aorta and, indeed, any other rise of blood-pressure, was found by Sollmann and Pilcher to produce a moderate constrictor effect; the stimulation being due, presumably, to increased intracranial pressure. While the absolute rise is the same, the percentage rise is inverse. At 50 mm. the percentile rise would be 80 per cent.; at 100 mm. it would be 40 per cent., etc. The degree of vasoconstriction—the clamping of the aorta—is, of course, uniform; hence, the absolute rise is a much better index of vasomotor changes of blood-pressure than is the percentile rise. When the aorta is compressed, the heart is dilated to about the same relative degree in systole and diastole. The excursions remain practically unchanged. The high blood-pressure is maintained for at least twenty minutes, and then falls very slowly, the heart continuing to beat efficiently for several hours. Ordinarily, therefore, the heart is not discoverably injured by the high pressure and resistance. Sometimes, however, presumably because the heart is already weak, the muscles may pass early into sudden and irrecoverable fibrillation.

When the pressure on the aorta is suddenly released, the blood-pressure falls temporarily below the normal level. This fall is generally attributed to vasomotor paralysis, but this view is disproven by the authors' experiments. Their perfusion method shows that the vasomotor center is not depressed in this period; static stimulation still raises the blood-pressure; and the fall of pressure is equally marked with compressions lasting only half a minute, in which a peripheral vasomotor paralysis by anemia is excluded. On the other hand, they have distinct evidence of cardiac changes. During the fall of pressure the systole and diastole are both incomplete; that is to say, the heart neither fills nor empties itself as completely as normally. This inefficiency of the heart cannot be due to an injury of the cardiac muscle; for as they have seen, the heart is able to work against high pressure indefinitely. The explanation is probably to be sought in temporary maladjustments. On the one hand, the tone of the heart muscle has been pitched to the high resistance and cannot instantly change its pitch to a low resistance. On the other hand, a large part of the blood thrown out by the heart is required to fill the depleted arterial system, so that the return flow to the heart must be temporarily impeded. Similar temporary maladjustments must exist in any sudden change of resistance of loss of blood. They do not occur when the changes are produced gradually. The authors therefore emphasize that it would be safer to apply any measures which alter the resistance to the heart gradually.

61. Lipoids and Hemolysis.—While working with a number of laking or hemolytic agents Pilcher observed that a number of bland oils increase the hemolytic power of certain substances which are either lipoid solvents (alcohol and ether) or are soluble in oils (chloral hydrate). This holds true whether the blood-corpuscles are first shaken with the oils and are then added to the plain hemolytic agent, or whether plain or "oiled" corpuscles are added to the hemolytic agent saturated with the oils. The increased hemolysis caused by the oils was

V. 60
1913

not due to free fatty acids, for the oils were neutral or at least very faintly acid to alcohol moistened litmus. The "oiled" blood, on standing, did not lake before the plain blood. Shaken plain blood behaved as unshaken blood. It is suggested that the oils increase the permeability of the lipoid (lecithincholesterin) cell envelope to the laking agents.

Several series of experiments were made, using 50 per cent. alcohol in normal saline as a laking agent. Five c.c. of a 5 per cent. mixture of sheep's corpuscles, both plain and "oiled," were added to 3.7 c.c. of plain alcohol made up to 5 c.c. with normal saline solution. The linseed and olive oil corpuscles were laked within five minutes, the petrolatum in thirty and the plain corpuscles in sixty minutes. With 3.5 c.c. of alcohol, plain and petrolatum corpuscles were laked in about three hours, the cottonseed oil corpuscles in one and one-half hours, while the linseed and olive oil corpuscles were still laked in five minutes. In other experiments, petrolatum corpuscles were laked somewhat more readily than plain. When the alcohol was saturated with the oils it was found that laking occurred more rapidly than with plain alcohol, so that in this series smaller quantities of alcohol were used. Two c.c. of alcohol saturated with linseed and olive oils laked linseed and olive oil corpuscles within one hour, and cottonseed corpuscles somewhat less rapidly; the plain and petrolatum corpuscles were laked overnight. Alcohol saturated with cottonseed oil and petrolatum liquid laked linseed, olive and cottonseed (the latter only partially) corpuscles overnight, but not plain and petrolatum corpuscles; so that linseed and olive oils increase alcohol laking more than cottonseed oil and petrolatum. Linseed oil is soluble in ten parts of absolute alcohol, olive oil sparingly, cottonseed oil and petrolatum very sparingly. This difference in solubility may explain the greater action of the linseed and olive oils, although there was not a great difference between the action of the two and linseed oil is much more soluble in alcohol than is olive oil. In the presence of oils even completely laked mixtures may be cloudy, so that the microscope was employed to determine when the corpuscles were in complete solution.

62. **Nasal Treatment in Asthma.**—Abbott found in all his forty-four cases of bronchial asthma that there was a more or less hypertrophied condition of the mucous membrane over or near the middle turbinate body and in all but two of the cases removal or lessening of the hypertrophied condition caused a disappearance or improvement, in a very short time, of the symptoms of asthma. The treatment used in these cases varied with the variations in the conditions found. Sometimes the ethmoid condition was uncomplicated, so treatment was directed to it alone, while in others it was found that there existed other conditions which seemed to have been the cause of the ethmoiditis. When the ethmoiditis alone existed the treatment varied from local applications of silver nitrate, chromic acid, trichloracetic acid, cauterization with the electric cautery and simple removal of the apparent hypertrophic tissue, to a complete cleaning out of the ethmoid cells.

The results Abbott has been able to get so far are, he says, very interesting. In one case, a woman of 40, asthma had existed for twelve years, and had been constant, with frequent severe attacks. After operation she was clear for two months and the attack was mild. A young lady of 26, who had been asthmatic for twenty-three years, with severe attacks at frequent intervals, was free for three and one-half months when a slight attack laid her up for three days and she had only used drugs during those three days, although before operation she was up every night for months for an hour at least inhaling and taking drugs of different types. A man of 26, with a history of asthma for about eight years, was free ten months after operation, then suffered for five days from asthma after a severe cold and has been free now for four and one-half months and has gained twenty-three pounds in weight. The case that has gone longest with no recurrence is now about two years and two months since treatment.

Delaware State Medical Journal, Wilmington

March, IV, No. 3, pp. 1-26

65 Venereal Diseases vs. Prostitution. C. DeJ. Harbordt, Dover.

Georgia Medical Association Journal, Augusta

April, II, No. 11, pp. 345-376

66 Sanitation in Schools. T. A. Mann, Brunswick.
67 Prevention of Pellagra. H. F. Harris, Atlanta.
68 Sanitation in Home. J. R. McMichael, Quitman.
69 History of Obstetric Forceps. A. J. Kilpatrick, Augusta.
70 Treatment of Typhoid. S. T. Revell, Louisville.
71 Cotton Mill and Tuberculosis. J. H. Hammond, Lafayette.

Journal-Lancet, Minneapolis

April 1, XXXIII, No. 7, pp. 191-222

72 Open Treatment of Fractures. E. H. Beckmann, Rochester, Minn.
73 High Blood-Pressure and Arteriosclerosis. W. H. Bodenstab, Bismarck, N. Dak.
74 Male Bladder Changes in Form and Position from Infancy to Old Age. F. R. Wright, Minneapolis.
75 Pelvic Cellulitis. F. Treon, Chamberlain, S. Dak.
76 Present Status and Indication for Abdominal Cesarean Section. H. I. King, Aberdeen, S. Dak.
77 Significance of Pupillary Inequality. J. M. Robinson, Duluth.
78 Chemical Tests for Occult Blood. H. E. Robertson, Minneapolis.

Journal of Biological Chemistry, Baltimore

April, XIV, No. 3, pp. 159-334

79 Tannic-Acid Fermentation. L. Knudson, Ithaca, N. Y.
80 Idem: Effect of Nutrition on Production of Enzyme Tannase. L. Knudson, Ithaca, N. Y.
81 Method of Preparing Ash-Free Casein and Paracasein. L. L. Van Slyke and A. W. Bosworth, Geneva, N. Y.
82 Preparation and Composition of Basic Calcium Caseinate and Paracaseinate. A. W. Bosworth and L. L. Van Slyke, Geneva, N. Y.
83 Preparation and Composition of Unsaturated or Acid Caseinates and Paracaseinates. L. L. Van Slyke and A. W. Bosworth, Geneva, N. Y.
84 Valency of Molecules and Molecular Weights of Casein and Paracasein. L. L. Van Slyke and A. W. Bosworth, Geneva, N. Y.
85 Composition and Properties of Brine-Soluble Compound in Cheese. L. L. Van Slyke and A. W. Bosworth, Geneva, N. Y.
86 Rate of Extraction of Protein (Salmin) from Desiccated Tissue by Aqueous Solvent. T. B. Robertson, San Francisco.
87 *Quantitative Chemical Analysis of Human Bile. J. Rosenbloom, Pittsburgh.
88 Behavior of Some Hydantoin Derivatives in Metabolism. H. B. Lewis, New Haven, Conn.
89 Cerebronic Acid. P. A. Levene and C. J. West, New York.
90 Chemical Differentiation of Central Nervous System: Comparison of Brain of Albino Rat at Birth with That of Fetal Pig. M. L. Koch, Philadelphia.
91 Idem: Comparison of Two Methods of Preserving Nerve Tissue for Subsequent Chemical Examination. W. Koch and M. L. Koch, Philadelphia.
92 *Rapid Clinical Method for Estimation of Urea in Urine. E. K. Marshall, Baltimore.
93 Lipins of Heart Muscle of Ox. J. Rosenbloom, Pittsburgh.
94 Folin's Microchemical Method for Determination of Urea. J. C. Bock, Boston.
95 Researches on Purins. C. O. Johns and A. G. Hogan, New Haven, Conn.
96 Researches on Pyrimidins: Pyrimidin-Nucleosides. T. B. Johnson and L. H. Chernoff, New Haven, Conn.
97 Intermediary Metabolism of Amino-Acids. H. D. Dakin, New York.

87. **Quantitative Chemical Analysis of Human Bile.**—Rosenbloom examined 3,180 c.c. of bile obtained from a patient with a biliary fistula. His analysis yielded the following results: bile salts, 10.1; mucin and pigments, 4.86; cholesterol, 2.61; fat, 6.85; soaps, 2.6; lecithin, 6.42; total solids, 29.8; inorganic, 9.2; water, 970.2; fatty acids, 1.2.

92. **Clinical Estimation of Urea.**—The procedure described by Marshall is said to be peculiarly useful in its application to pathologic urines since the presence of glucose and protein, usually so annoying in the estimation of urea, are without influence here and need not even be removed. In the preparation of the enzyme solution, soy beans are ground to a fine powder which can be preserved in well-stoppered dry bottles for months without appreciable loss of activity. Twenty-five grams of this powder are mixed with 250 c.c. of distilled water, and allowed to stand with occasional agitation for about an hour.

Twenty-five c.c. of N/10 hydrochloric acid are now added, and the mixture allowed to remain a few minutes longer (best in a water bath at about 35 C.), when a large proportion of the protein of the bean extract is precipitated. The mixture is filtered; the filtrate treated with a few drops of toluene and

preserved for use in a stoppered vessel. On standing the originally clear fluid becomes opalescent, and finally a precipitate is formed, but the solution remains sufficiently active for use in the method at least five days after its preparation when kept at the room temperature. This solution is alkaline to methyl orange, and 2 c.c. generally require from 0.28 to 0.34 c.c. N/10 hydrochloric acid for neutralization. This factor should be determined once for 2 c.c. of each preparation and can then be employed as a correction as long as the solution is used. The alkalinity is apparently constant from day to day. If for any reason the extract should not be distinctly alkaline to methyl orange, less acid should be used in its preparation, as an extract which reacts acid to methyl orange is scarcely active.

In the execution of the method two 5 c.c. portions of the urine are measured into flasks of 200-300 c.c. capacity and diluted with distilled water to about 100-125 c.c. Two c.c. of enzyme solution are added to one flask, a few drops of toluene to each and the solution allowed to remain, well stoppered, at room temperature over night. The fluid in each flask is titrated to a distinct pink color with N/10 hydrochloric acid using methyl orange as an indicator. The amount of hydrochloric acid required for the contents of the flask containing the urine and enzyme solution less the amount used for 5 c.c. of urine alone and that previously determined for 2 c.c. of enzyme solution, corresponds to the urea originally present in the sample of urine.

Since 1 c.c. of N/10 hydrochloric acid is equivalent to 3 mg. of urea, the number of cubic centimeters required multiplied by 0.6 gives the value of urea expressed in grams per liter of urine. The time required for complete hydrolysis of the urea depends on the quantity of urine used, the concentration of the urea, the amount of enzyme present and the temperature of action. The velocity of the reaction is approximately twice as rapid at 35 C. as at 25 C., and directly proportional to the enzyme concentration within certain limits. The conversion is complete in less than one hour at 35 C., when 10 c.c. of the enzyme solution are employed instead of 2 c.c. A cloudiness, however, is produced on titrating a solution containing 10 c.c. of the enzyme mixture, which renders the end point uncertain and the procedure less accurate. With the use of only 2 c.c. of enzyme solution this cloudiness is scarcely noticeable.

If more rapidity is required than is attained by the method as outlined, digestion for three hours at a temperature of 35 C.-28 C. will suffice, or, if accuracy is to be sacrificed to rapidity, less urine and more enzyme solution can be employed.

Journal of Cutaneous Diseases, New York

April, XXXI, No. 4, pp. 221-304

98 Classification and Nomenclature of Acquired Cutaneous Syphilis. G. H. Fox, New York.
99 Granuloma Inguinale Tropicum: Report of Three Cases. J. Grindon, St. Louis.
100 Scaphoid Scapula and Its Syndrome: Connection with Syphilis in Ascendants. W. W. Graves, St. Louis.
101 Multiple Lymphoid Tumors of Skin: Report of Case. J. M. Winfield, Brooklyn.
102 *Can Psoriasis Be Cured? A. Ravogli, Cincinnati.

102. **Can Psoriasis Be Cured?**—Ravogli has nearly abandoned the use of chrysarobin, pyrogallol and tar, for the reason that they cause too much discomfort to the patient. He finds that in cases of ordinary psoriasis a salve with white precipitate gives the best results:

℞	gm. or c.c.		gr. v to x
Hydrarg. precip. alb.	33-66		
Bismuthi subnitr.			
Zinci oxydi	2	or	ää 3 ss
Phenolis	4		gtt. vi
Petrolat. alb.	30		3 i

Laryngoscope, St. Louis

March, XXIII, No. 3, pp. 161-240

103 Innocent Growths of Larynx: Eight Cases. J. W. Wood, London.
104 Laryngotracheal Manifestations of Thyroid Disease. O. J. Stein, Chicago.
105 Determining Factors in Tinnitus Aurium. E. P. Fowler, New York.
106 Some Curable Affections of Acoustic Nerve. A. Lewy, Chicago.
107 Some Ethical Problems Confronting Eye, Ear, Nose and Throat Specialist. L. Emerson, Orange, N. J.
108 Extradural Abscess Complicating Frontal Sinusitis. R. H. Johnston, Baltimore.
109 Fibrinous Rhinitis. V. Dabney, Washington, D. C.
110 The Monochord. M. A. Goldstein, St. Louis.
111 Mouth Gag with Permanently Attached Tube for Continuous Etherization and New Tonsil Grasp. W. C. Wood, Philadelphia.
112 Curet for Bridge in Radical Mastoid. M. D. Stevenson, Akron, Ohio.
113 Corwin's Tonsil Hemostat. A. M. Corwin, Chicago.

Medical Record, New York

April 12, LXXXIII, No. 15, pp. 645-690

114 Peritoneal Adhesions of Insidious Toxic Group. R. T. Morris, New York.
115 Prevalence of Catarrhal Deafness and Its Economic Consideration. H. Hays, New York.
116 Osteitis, Periostitis, Etc. W. W. Griffin, New York.
117 Results of Tonsillectomy. B. DeF. Sheedy, New York.
118 *Pathology and Treatment of Callous Ulcer of Bladder. L. Buerger, New York.
119 Sexual Disorders Associated with Disease of Nervous System. W. M. Leszynsky, New York.
120 Accuracy of Systolic Blood-Pressure Determinations by Various Methods and Clinical Use of Diastolic Pressure. L. Clendenning, Kansas City, Mo.

118. **Callous Ulcer of Bladder.**—Buerger summarizes his paper as follows:

Clinical, cystoscopic and pathologic studies in two cases of vesical ulceration have conclusively shown that simple callous ulcer of the bladder can and does exist. The clinical symptoms of this condition are intense dysuria, urgency, frequency of micturition with sanguineous and purulent urine. The manifestations became progressively more marked and take a chronic course. The chronicity of this disease and the progressive impairment of vesical capacity speak strongly for the view that chronic cystitis and contracted bladder are often the sequelae and outcome of solitary ulceration. The region of the trigone seems to be the favorite site for the chronic indurated type of ulceration. Although designated as simple, and often as solitary ulcer of the bladder, this condition may be accompanied by one or more superficial erosions of the mucous membrane, elsewhere in the bladder interior, lesions which are undoubtedly secondary to the intense cystitis accompanying the ulcer.

The most effective and rapid method of curing the disease as well as the simplest procedure is the excision of the ulcerated area by means of the author's operating cystoscope and punch forceps. Less radical measures of treatment, such as cauterization with the actual cautery or fulguration, and silver nitrate irrigation are of no avail in this type of ulcer. Histologic examination in two cases has shown that the pathology of this condition is rather characteristic, there being a superficial deposit of urinary salts, a layer of necrosis and ulceration, and a stratum of newly formed connective tissue with active evidences of inflammation. The margin of the ulcer shows intensely vascular inflamed mucous membrane and submucosa.

In every case of chronic cystitis, particularly in women, in which dysuria, urgency and frequency of micturition are marked, a careful search should be made for this form of ulcer, for if it be present, it is more than likely that chronic cystitis, irritable and contracted bladder are secondary, and may be cured by the method advocated

Mississippi Medical Monthly, Vicksburg

April, XVII, No. 12, pp. 231-250

121 Venereal Prophylaxis. A. J. Jagoe, Clarksdale.
122 Some Experiences with Pellagra. G. M. Shaw, Robinsonville.
123 Pneumonia; Bronchopneumonia; Capillary Bronchitis; Lobular Pneumonia; Catarrhal Pneumonia. R. M. Donald, Hattiesburg.
124 Better Health Conditions for Country How Obtained. J. M. Gurney, Tupelo.

New York Medical Journal

April 12, XCVII, No. 15, pp. 741-796

125 Poliomyelitis and Variola. F. Proescher, Pittsburgh.
126 Pathology of Neuralgia. G. McConnell, Philadelphia.
127 How Much of Eugenics is Scientific? C. E. Nammack, New York.
128 Atypical Children. S. P. Goodhart, New York.
129 Hemorrhoid Operations. L. Watson, Oklahoma City, Okla.
130 Improvements in Speculum. P. Z. Herbert, New York.
131 Exercise and Diet in Relation to Growth. R. H. Dennett, New York.
132 Treatment of Pneumonia. M. Packard, New York.
133 Jequirity in Ophthalmic Work. J. Allan, London, England.
134 Heart-Block (Adams-Stokes Syndrome). I. W. Held, New York.
135 Suitable Amusements for Growing Child. P. M. Van Voast, New York.

V. 6
1913

136 Diseases Influencing Growth. B. R. Hoobler, New York.
137 Acute Anterior Poliomyelitis Following Bite of Dog Infected with Rabies. H. B. Haywood, Raleigh, N. C.
138 Injection of Salvarsan. R. Ormsby, New York.

Pennsylvania Medical Journal, Athens

March, XVI, No. 6, pp. 421-512

139 *Hypophysis Cerebri in Disease; Method and Results of Surgical Intervention. C. H. Frazier, Philadelphia.
140 Gradually Developing Hemiplegia Due to Cerebral Neoplasm. M. H. Fussell and S. Leopold, Philadelphia.
141 Paraplegia in Hodgkin's Disease; Treatment by Laminectomy and Roentgen Rays. C. K. Mills and E. Martin, Philadelphia.
142 Cases Illustrating Certain Phases of Cerebrospinal Surgery. J. S. Rodman, Philadelphia.
143 *Treatment of Talipes. D. P. Willard, Philadelphia.

139. Also published in the *Annals of Surgery*, February, 1913, and abstracted in THE JOURNAL, Oct. 26, 1912, p. 1566.

143. Abstracted in THE JOURNAL, Nov. 16, 1912, p. 1814.

Southern Medical Journal, Nashville

April, VI, No. 4, pp. 249-288

144 *Studies of Malarial Fevers in Alabama. R. H. von Ezdorf, Mobile, Ala.
145 Early and Undeveloped Cases of Pellagra. B. R. Tucker, Richmond, Va.
146 *Luetin Skin Reaction in Diagnosing Syphilis. C. A. Simpson, Washington, D. C.
147 Latent Gout and Its Manifestations. C. M. Nice, Birmingham, Ala.
148 Medical Inspection of Schools in South Carolina. L. R. H. Gantt, Spartanburg, S. C.
149 Forty-Eight Cases of Goiter. E. G. Jones, Atlanta, Ga.
150 Gastric and Duodenal Ulcer. P. C. Perry, Jacksonville, Fla.
151 Discrepancy Between Clinical and Post-Mortem Findings in Cancer of Stomach. W. A. Bryan, Nashville.
152 Gastric and Duodenal Ulcers, with Special Reference to Method of Operative Procedure Employed. F. Martin, Baltimore.
153 Volvulus of Sigmoid Flexure; Report of Case. G. T. Tyler, Greenville, S. C.

144. Abstracted in THE JOURNAL, Nov. 30, 1912, p. 1999.

146. Luetin Skin Reaction in Diagnosing Syphilis.—Simpson has injected over fifty patients with luetin, but has been able to follow and control with Wassermann's only forty-three cases. These results include cases in all stages of syphilis from early secondary to late tertiary forms and five cases of tabes. In thirty-eight active cases of syphilis, some in the first few months of the disease, he got over 80 per cent. positive reactions, while the late tertiary cases under treatment gave a much higher percentage. In the five cases with clinical symptoms of tabes, three gave a history of syphilis and of these only two gave positive Wassermanns and both of these gave positive luetin reactions.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

March, XXXI, No. 119, pp. 1-96

1 *Case of Acute Septicemia Due to B. Pyocyaneus. J. M. Clarke.
2 Aleucocythemic Leukemia. R. Waterhouse.
3 Case of Alternating Oxaluria and Phosphaturia. F. H. Edgeworth.
4 Idem. C. W. J. Brasher.
5 Intravenous Administration of Neosalvarsan in Syphilis. J. A. Nixon.
6 Example of Stokes-Adams Syndrome. C. Coombs.
7 *End-Results of Cases Operated On for Gall-Stones. A. B. Short.
8 Treatment of Chronic Constipation. F. H. Edgeworth.

1. Pyocyaneus.—Clarke's patient, male, aged 15, was suddenly taken with headache, drowsiness and vomiting; there were no rigors. He felt ill, but kept at work three days, when he took to his bed, where he remained, complaining chiefly of headache, drowsiness, weakness and slight cough. There was no return of the initial vomiting, no diarrhea, no jaundice, no photophobia, no pains in limbs. On the fifth day, patient was weak and drowsy, he lay on his back with his eyes closed, and complained of frontal headache. Pulse 82, regular. Temperature 100 F. Respiration 20. Bowels constipated. Tongue furred thickly. Except for the signs of bronchitis, the lungs were normal. Heart, liver, kidneys, normal. The nervous symptoms predominated at this time. He was very drowsy, but sensible; answered when spoken to, and was not delirious. On the tenth day he had a distinct rigor. On the twelfth day he fell asleep directly after feeding; there was photophobia, and he covered his head with the bedclothes, otherwise no change in his condition, and no fresh physical signs of organic disease in nervous system or lungs. The bronchitis continued. Profuse sweats. The case at this stage resembled, clinically, one of meningitis. On the sixteenth day there was distinct jaundice, edge of liver was one inch below the costal margin, splenic dulness was increased, and the tip felt. A systolic murmur appeared over the base of the heart. No hemorrhages or petechiae into skin. Fresh rigors had occurred. Lumbar puncture. The cerebrospinal fluid dropped out slowly, it was clear, and contained a few polymorphonuclear cells and no organisms. During the following week he was extremely ill, deeply jaundiced, restless, and tossing about constantly, especially at night. He was so ill that after this time it was difficult to examine him. He was constantly groaning, which obscured the lung and heart sounds and during the last few days he could not be turned over to examine the back of his lungs carefully. He rapidly emaciated, and for some days exhaled a marked cadaveric odor. On the twenty-third day, he was much emaciated and deeply jaundiced. The liver appeared reduced in size, the spleen decidedly enlarged. The urine contained many crystals of calcium carbonate. There were no enlarged glands, and no hemorrhages throughout the illness. The pulse was soft and running. Tongue very dry and furred. No abdominal distention. The motions were very light in color. There was some dulness at the bases behind, and rhonchi and scattered moist crepitations over both lungs, but his constant groaning interfered with auscultation. Blood.—Erythrocytes, 2,890,000; leukocytes, 14,000; hemoglobin, 35 per cent. The next day the *B. pyocyaneus* in pure culture was recovered from the blood and feces. Patient died on the twenty-fifth day of his illness. After death the *B. pyocyaneus* was recovered in pure culture from the heart's blood, pleural exudate and lung abscesses, but not from the spleen or brain.

7. End-Results of Cases Operated on for Gall-Stones.—Of eighty-six patients operated on for gall-stones by Short twelve died, but the mortality in ordinary and febrile cases was 12 per cent. Unlike most statistics, the mortality was higher in removals of the stone from the gall-bladder than from the common duct. Of sixty patients followed through for more than a year, about 82 per cent. are quite cured, or very greatly improved. Failure is usually due to adhesions, not to recurrence of the stone formation. Where adhesions were found to be extensive, six out of nineteen died. Of those traced, four out of eleven were but little improved (36 per cent. failures). Apart from adhesions, there were only 10 per cent. failures. According to Short's figures, of 100 ordinary afebrile patients operated on, twelve died, seventy-five are greatly improved or quite cured, and thirteen are not much bettered. Cases are related of intestinal obstruction by a gall-stone, vomiting a stone, injury of the portal vein, general peritonitis due to gall-stones, deaths from perforating gastric ulcer and from hematemesis caused by a gastric ulcer soon after operation for gall-stones, and diabetes supervening long afterward.

British Medical Journal, London

March 29, I, No. 2726, pp. 645-696

9 *Mucous Channels and Blood-Stream as Alternative Routes of Infection. C. J. Bond.
10 *Genital Functions of Ductless Glands in Female. W. B. Bell.
11 Esthetics of Medicine. C. J. Macalister.
12 *Henoch's Purpura with Intussusception: Laparotomy; Recovery. S. Barling.

9. Routes of Infection.—The main point made by Bond is that, when an organism like the *Bacillus coli* reaches the pelvis of the kidney by ascending the urinary tract, it produces symptoms and effects which differ from those produced by the same organism when it reaches the kidney by way of the

blood-stream. He also suggests that these differences depend on the fact that the organism is undergoing adaptation to a mucous and urinary environment in the one case and a blood or lymphatic stream environment in the other.

10. Published in the *Lancet*, March 22, and abstracted in THE JOURNAL, April 19.

12. **Henoch's Purpura with Intussusception.**—Barling's patient, a boy aged 4, had suffered from stomach-ache and frequent attacks of sickness for twelve months. Three weeks before admission the attacks of abdominal pain and sickness became more noticeable, and were accompanied by a rash which appeared on the buttocks, and then spread to the limbs; the rash at first was definitely urticarial, the spots being raised above the surface and about the size of a shilling; these spots soon became hemorrhagic. On one occasion the mother noticed a small amount of blood in the stools. The rash faded, but fresh crops of a similar nature came out, the spots, however, being smaller. The child gradually improved, but at the end of three weeks, on the evening before admission, he had a sudden violent attack of abdominal pain, worse than anything he had ever experienced previously; he was sick, and almost immediately dark fluid blood was passed from the bowel. These symptoms of violent pain, sickness and hemorrhage from the bowel continued intermittently throughout the night, but abated somewhat on the morning of admission. He was seen by his doctor six hours after the attack had started; examination of the abdomen, on the suspicion of an intussusception being present, failed to reveal a tumor. On admission, twenty hours after the onset of pain, the child was pale and quiet, pulse 128, temperature normal; the abdomen was soft, and an irregular trilobed tumor could be felt lying somewhat transversely in the epigastrium, and apparently somewhat movable on respiration. Per rectum nothing could be felt; dark fluid blood, however, escaped on removing the finger from the bowel. The urine contained a light cloud of albumin, but gave no reaction to guaiacum. On the knees and the elbows, there was a slightly raised papular rash, some of the papules showing old hemorrhage. A median incision above the umbilicus revealed a dark tumor lying more or less transversely across the abdomen; owing to the force with which the invaginated bowel had been thrust into the lumen of the colon, the latter had become bent on itself, giving the trilobed appearance which had been noticed on examination. The tumor was about 10 in. in length and the apex of the intussusception was in the upper part of the descending colon. The distal half of the swelling reduced quite easily; the proximal 4 in., however, required some twenty minutes' manipulation before the invaginated bowel could be freed, and in effecting this reduction the peritoneal coat of the ascending colon tore. This residual part of the tumor consisted of the ascending colon, containing the caput cæci, the appendix, and some 18 in. of the lower end of the ileum. These were expressed in turn. The appendix, cecum and the ileum that had been involved in the intussusception showed extensive interstitial hemorrhage, and some inches of small bowel were black and apparently gangrenous. The part of the ileum above the obstructed portion was distended for some distance by dark blood-stained fluid lying in its lumen. The gangrenous portion of bowel, together with some inches on the proximal and distal sides of it, was excised, about 12 in. in all being removed, the open ends of the bowel crushed and turned in, and the continuity of the gut established by a lateral anastomosis between the ileum and the lower part of the ascending colon. The patient suffered much from shock, and was very restless for the first forty-eight hours, but after that made satisfactory progress.

Edinburgh Medical Journal

April, X, No. 4, pp. 289-384

13 General Paralysis of Insane. G. M. Robertson.
14 Case of Ruptured Very Early Primary Ovarian Pregnancy. G. Chiene.
15 Multiple Myeloma, and Its Association with Bence Jones' Albumose in Urine. T. Shennan.
16 Rheumatoid Arthritis in Children. J. Lindsay.
17 Re-Formation of Bone After Resection. G. A. Pirie.
18 Nephritis, with Ascites, Bilateral Hydrothorax and General Edema, in Secondary Syphilis. F. P. Weber.

Indian Medical Gazette, Calcutta

March, XLVIII, No. 3, pp. 89-128

19 Value of Amorphous Cinchona Alkaloid in Malaria. E. E. Waters.
20 Anaphylaxis. W. D. Sutherland.
21 Management of Puerperium and Its Relation to Puerperal Fever. G. T. Birdwood.
22 Two Patients Successfully Treated by Psychotherapy. O. Berkeley-Hill.

Lancet, London

March 29, I, No. 4674, pp. 869-936

23 Intrathoracic Aneurysm. F. Dell. Hall.
24 *Eczema Oris as Manifestation of Congenital Syphilis. I. Findlay and H. F. Watson.
25 Relation of Puberty and Menopause to Neurasthenia. H. Macnaughton-Jones.
26 Hyoscin-Morphin Anesthesia for Alcohol Injection in Neuralgia. W. Harris.
27 Clinical Study of Pulmonary Tuberculosis. C. T. Williams.
28 Individual Treatment of Diabetes. S. A. Arany.

24. **Eczema Oris in Congenital Syphilis.**—There is, according to Findlay and Watson, one form of skin disease which, so far as the literature reveals, has not been so considered, and which they propose to designate "eczema oris syphilitica." Their attention was directed to the condition in a boy suffering from infantile paralysis. The boy presented no specific stigmata, and no history of anything suggestive of syphilis in infancy could be elicited, yet in both his mother and himself the blood was found on examination to react very strongly to Wassermann's test. In its most typical form the lesion is situated at one or both angles of the mouth and radiates therefrom toward the cheek, sometimes in the form of fan-shaped patches. It may, however, completely surround the mouth and implicate the face extensively. The patches are somewhat irregular in shape with sharply cut or ill-defined margins. They are red in color, at times the hyperemia being very marked. The surface is, as a rule, dry and scaly, although occasionally, and especially during an exacerbation of the mischief, there may be some discharge with the formation of crusts, and at this period there is always a certain degree of induration. The eczematous patch is continuous with, and frequently invades the mucous membrane of the lip, giving it a slightly papillary appearance. The lips themselves may be swollen to a greater or less degree. A similar condition around the nostrils, where there is usually a greater tendency to moisture and eczema tarsi, are also present in a proportion of the cases. It is a most obstinate and chronic malady, never entirely disappearing, though varying much in severity from time to time. The patients do not as a rule present any specific stigmata, and the proof that the lesion is of a syphilitic nature rests on the presence of a positive Wassermann reaction and on the result of anti-specific treatment. In five out of twenty-one cases seen by Findlay and Watson, however, definite specific stigmata—e. g., deafness, notching of the upper incisors, "saddle nose," or cicatrices round the mouth—were present. The diagnostic features on which they lay most stress are the chronicity, but more especially the situation of the lesion at the angles of the mouth with implication of the mucous membrane of the lips.

Sei-I-Kwai Medical Journal, Tokyo

March, XXXII, No. 3, pp. 17-40

29 Method of Increasing Body Weight. H. Sewaki.

Annales de l'Institut Pasteur, Paris

February, XXVII, No. 2, pp. 97-184

30 Autolysis. (Étude de biologie générale.) M. Nicolle.
31 Autolysis of the Colon Bacillus. (Expériences sur l'autolyse du coli-bacille.) E. Aillaire.
32 Research on Immunization Against Anticoagulating Action of Peptone. E. and M. Pozerska. Commenced in No. 1.
33 Sterile Tadpoles. (Sur l'élevage des têtards stériles.) E. Wollman.
34 Vaccination of Cattle Against Tuberculosis. (Nouvelles recherches expérimentales sur la vaccination des bovidés contre la tuberculose et sur le sort des bacilles tuberculeux dans l'organisme des vaccinés.) A. Calmette and C. Guerin.
35 Vaccination Against Typhoid. (De l'action du sérum antityphique de Besredka sur l'évolution, de la fièvre typhoïde.) C. Andriescu and M. Cluca.
36 Comparative Resistance to Autolysis of Different Bacteria. (Préparation de "solutions" toxiques à l'aide de l'autolyse.) A. T. Salimbeni.

V. 60
1913

Annales de Médecine et Chirurgie Infantiles, Paris

March 15, XVII, No. 6, pp. 185-209

37 *The Cerebrospinal Fluid. (Sémiologie du liquide céphalo-rachidien.) F. Rathery.
38 *Infantile Scorbutus. (La maladie de Barlow; 8 cas.—Essai de traitement prophylactique.) P. de Sagher.
39 *Chronic Diphtheria of the Air Passages. A. Gouget.
40 Efficacy of Serotherapy in Pure Cases of Typhoid Fever; 131 Cases. M. A. Rodet.

37. **The Cerebrospinal Fluid.**—Rathery reviews the information that may be obtained from the cerebrospinal fluid by physical, chemical, histologic, bacteriologic and biologic examination.

38. **Infantile Scorbutus.**—De Sagher has found that the increasing use of artificial foods seems to be increasing the prevalence of scorbutus in infants. He has encountered six well defined cases during the last year, and describes in detail eight. They were all in well-to-do families as the children of the poor are not fed on these expensive artificial foods and usually are given early a little food from the family table. He is convinced that incomplete forms of scorbutus are more frequent than is generally recognized; he knows of a number of instances in which the infants were treated for Pott's disease or coxalgia or osteomyelitis. Even Marfan diagnosed in one case "pseudoparalysis of syphilitic origin," which proved to be merely scorbutus. Hutinel warns that scorbutus should be thought of first in every case of painful paraplegia in an infant, or even when the child is merely a little uneasy when its legs are touched. Do not wait for further symptoms of scorbutus to develop. Scorbutus is exceptional under five months and after two years of age. In de Sagher's cases some of the infants had been fed on condensed milk, some on nutricia milk, some on maltosan and some on boiled milk. To ward off any danger from this cause, he orders systematically, after the age of six months, from 2 to 6 teaspoonfuls a day of grape juice, adding to this after two or three months from 1 to 3 teaspoonfuls of some preserve, his preference being banana jam. This not only wards off scorbutus but it combats constipation and supplies a little iron. None has ever developed scorbutus among the children fed in this way.

39. **Chronic Diphtheria of the Air Passages.**—Gouget discusses some recent cases in which diphtheria bacilli were found in the sputum of persons from several months to years after diphtheria. Beyer's patient was a man of 43 with chronic fibrinous tracheobronchitis and no measures proved successful in banishing the diphtheria bacilli from his sputum, so that the attempt was abandoned after nine months of futile efforts. Schmidt's patient was a woman of 62 with chronic interstitial pneumonia with varying general symptoms for ten years during which period diphtheria bacilli could be cultivated from the sputum. The bacilli did not prove virulent for guinea-pigs, however.

Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

March, II, No. 3, pp. 225-320

41 *Chronic Appendicitis and Disease of the Ovaries. (Appendicite chronique et ovaires sclérokystiques.) L. N. Lapeyre.
42 *Placenta Tumors. (De la nature inflammatoire des chorio-angiomes placentaires.) E. Plauchu and P. Savy.
*Salvarsan and Neosalvarsan in Pregnancy and the Puerperium. (Etude sur les résultats observés à la clinique Tarnier par l'emploi du salvarsan et du néo-salvarsan chez les femmes enceintes, chez les femmes en couches et chez l'enfant nouveau-né.) J. Lemeland and H. Brisson

41. **Chronic Appendicitis and Sclerocystic Ovaries.**—Lapeyre reports seventeen cases from which he concludes that chronic appendicitis in women seems to be habitually accompanied by degeneration of the ovaries. The ovarian lesions may cause spontaneous and induced pain during and between the menses, dysmenorrhea, irregular menstruation and hemorrhages. The uterus at the same time generally shows signs of hyperplasia and is often displaced. The whole trouble is probably some primary disturbance in the sympathetic nervous system; this explains the alterations in the various organs as the nutrition suffers—ptosis, colitis and sclerocystic degeneration of the ovaries and chronic inflammation of the appendix. The central nervous system, irritated by some peripheral disturbance in some lesion in the vulva, vagina, uterus, appendix or pelvis, reacts by a reflex mechanism on the trophic nerves of the ovary. Treatment should aim to cure the local lesions before the central nervous system has been too seriously impaired. When the abdomen is opened it should be on the median line in women so as to permit systematic inspection of the entire pelvis and appendix region.

42. **Inflammatory Nature of Benign Tumors of the Placenta.**—Plauchu and Savy regard these tumors as frequently of syphilitic origin and in all cases due to a process resembling that of an infarct. These non-malignant tumors have a most nefarious influence on the vitality of the fetus. He found only thirty living children mentioned in fifty-four cases on record, and gives an illustration of a case personally observed.

43. **Salvarsan and Neosalvarsan for Parturients and New-Born Infants.**—Lemeland and Brisson here conclude their long report on this subject. They did not find either of the drugs invariably effectual in transforming a positive Wassermann reaction into a negative; it fluctuates almost immediately but soon returns to its former height. They found that neosalvarsan seems to disturb the organism more than salvarsan, and that its use is dangerous even in the moderate doses employed. It should be reserved until after it has established its standing in therapeutics.

Bulletin de l'Académie de Médecine, Paris

March 11, LXXVII, No. 9, pp. 169-198

44 Importance of Mode of Access in Surgery. (De l'importance des voies d'accès dans l'enseignement de la médecine opératoire.) E. Delorme.
45 *Vaccination Against Typhoid in the United States. M. Chantemesse.

45. **Vaccination Against Typhoid.**—See the Paris Letter in THE JOURNAL, April 12, p. 1166.

Journal de Chirurgie, Paris

March, X, No. 3, pp. 273-416

46 The Multiple Applications of Appendicostomy. L. Arnaud.

Journal de Médecine de Bordeaux

March 23, XLIII, No. 12, pp. 179-192

47 *Tonic-Clonic Spasmodic Torticollis. Desqueyroux.
48 *Occlusion of Intestine by Retrodisplaced Normal Uterus. (Occlusion intestinale par rétrodéviation d'un utérus normal.) H. Lefèvre.

47. **Spasmodic Torticollis.**—The patient was a girl of 17 taken suddenly with an apoplectiform attack followed by spasmodic contracture of the muscles of the neck bending the head down almost to the mamma. There were probably some minute lesions in the brain or medulla and this induced the contracture, but their action would probably have been only transient if it had not been for a tendency to hysteria which perpetuated and aggravated the spasms.

48. **Ileus from Displacement of Normal Uterus.**—Lefèvre's patient was a woman of 45 who for several years had had vague symptoms from retrodeviation of the rather large uterus. Otherwise she was in perfect health when she was jolted in a carriage and suddenly experienced intense pain and other signs of ileus with great depression. A loop of the small intestine was found incarcerated in the pouch of Douglas, the fundus of the uterus pinning the intestine against the sacrum. Correction of the displacement released the bowel and cured the patient at one stroke. Ileus from this cause in a non-pregnant woman is exceptional, according to the literature. Lefèvre could find only two cases on record (Koeberle and Cricks) in which an apparently normal non gravid uterus had induced ileus. Cricks' patient died. In Lefèvre's case the jolting of the carriage had evidently flung up the retroflexed fundus for a moment and during this moment the loop of intestine had slipped down behind it.

Lyon Médical, Lyons

March 23, XLV, No. 12, pp. 605-664

49 *Conditions Which Favor Application of Direct Sunlight in Therapeutics. (Des conditions qui favorisent la pratique de l'héliothérapie.) L. Jaubert.

49. **Conditions Which Favor Heliotherapy.**—Jaubert reviews the history of the utilization of the sun's rays in the treatment of disease and calls attention to its great value, particularly in surgical forms of tuberculosis. To get the best effect all factors which add to its value should be taken into consideration. Sun porches should preferably face south or, if that is impracticable, east in order to get the morning sun. Spring and summer are the most favorable seasons for the treatment, because the ultraviolet rays, which are particularly beneficial, are more abundant then. The air should be clear, the atmospheric moisture moderate and the prevailing winds not too strong. Where a choice of climate is possible, all these conditions should be taken into consideration and the patient sent to a high altitude or a warm sunny region. But heliotherapy may be utilized in any country and hospitals should always be built with sun porches with the most favorable exposures.

Presse Médicale, Paris

March 19, XXI, No. 23, pp. 221-228

50 Treatment of Gunshot Wounds. (Du traitement des blessures par balles de revolver et de fusils de guerre.) P. Reclus.

51 *Direct Sunlight in Treatment of Non-Tuberculous Disease. (L'héliothérapie dans les affections non tuberculeuses.) A. Aimes.

March 22, No. 24, pp. 229-240

52 Estimation of Minimal Blood-Pressure as the Standard Unit. (Une orientation nouvelle de la sphygmomanométrie.) V. Pachon.

53 Local Agglutinins in Diagnosis of Tuberculosis. L. Karawacki.

54 *Ozone in Treatment of Glycosuria. (Quelques états glycosuriques traités par l'ozone.) D. Labbé and P. Pérochon.

51. **Direct Sunlight in Treatment of Non-Tuberculous Affections.**—Aimes enumerates the various affections in which heliotherapy has been found an extremely useful adjuvant, citing various authors. The list includes varicose ulcers, burns, sprains and contusions, certain gynecologic affections, atrophied muscles, resolution of inflammatory exudates, and the sequels of phlebitis and conjunctivitis. He states that the mucosa is less sensitive to the sunlight than the skin, and relates that of forty-eight eyes with trachoma, thirty-five were cured by exposure to the direct sunlight at two sittings and there has been no recurrence during the long period since. The conjunctiva of the lids bears prolonged exposure to the direct sunlight without harm, according to Borel's experience, but he did not notice any improvement from the exposures in rheumatic iritis, in mycosis or in syphilitic affections. Aimes reiterates that heliotherapy can be applied everywhere and is within the reach of all, while the results may be remarkable and that no one should neglect this simple and easy method of treatment.

54. **Ozone in Treatment of Glycosuria.**—Labbé and Pérochon have their patients with glycosuria inhale ozone for from fifteen to thirty minutes a day, and have found that in some way it promotes the utilization of sugar so that sugar disappears more or less completely from the urine. Eight typical cases are described to show the benefit thus realized. In one case, for example, a man of 57, had had diabetes for six years and 50 gm. of sugar were found in the liter of urine. He inhaled ozone for fifteen minutes a day for two months by the end of which time the sugar had vanished from his urine. Two weeks later the sugar appeared anew in the urine and ran up to 8 gm., but subsided to traces on resumption of the ozone treatment. Another patient was a woman of 66 with diabetes for many years. She had 150 or 200 gm. of sugar to the liter of urine and this became materially reduced under the ozone treatment and her severe pruritus became very much improved. They theorize to explain the effect of the ozone: It seems to promote assimilation of carbohydrates. The nascent oxygen fastens on the reds and they transport it to all the tissues.

Revue de Gynécologie, Paris

January, XX, No. 1, pp. 1-112

55 Ovarian Teratoma Removed at Age of 50. (Névraxo-épithélíome de l'ovaire.) Gosset and P. Masson.

56 *Cancer of the Ampulla of Vater. D. Clermont.

56. **Cancer of the Ampulla of Vater.**—Clermont gives the details of a case from the Toulouse surgical service and summarizes thirty others from the literature. He approves of operating at two sittings, and insists on an early exploratory laparotomy as the outlook is comparatively good with cancer at this point. It causes symptoms early and shows little disposition to spread.

Revue Médicale de la Suisse Romande, Geneva

March, XXXIII, No. 3, pp. 177-284

57 Salvarsan in Syphilis. (Sur les résultats acquis dans le traitement de la syphilis par la médication d'Ehrlich.—Les neurorécidives.) Dind.

58 *Early Sign of Incipient Pericarditis. (Signe précoce de péricardite.—Eclat clangoreux diastolique au foyer pulmonaire.) G. Turrettini.

59 Much Technic for Examination of Sputum. (Le procédé de Much pour la coloration des bacilles de Koch dans les crachats; sa valeur clinique.) A. Cramer.

58. **Early Sign of Incipient Pericarditis.**—Turrettini wonders that greater attention has not been paid to the sign of impending pericarditis or endocarditis which Josserand noted some years ago. This is a sudden and violent clanging diastolic sound in the pulmonary area. In two recent cases Turrettini noticed the development of this sound and it was soon followed by other signs of pericarditis. The peculiar clanging nature of the secondary pulmonary sound was very pronounced and the vibration could be perceived by the hand. The second aortic sound was perceptible but less marked. One patient had chronic nephritis with hypertrophy and dilatation of the left heart and the fibrinous pericarditis, ushered in by the *éclat clangoreux diastolique*, developed under his eyes as the patient was under treatment for the kidney disease. There was no necropsy in the second case but clinically the conditions seemed to be the same as in the first case. The friction sound soon followed in both. In two other cases of pericarditis from the spread of a pleural process this peculiar clang to the sound was never noticed. He urges study of this clanging sound as the importance is obvious of being able to recognize incipient pericarditis and by instituting treatment in time possibly to ward it off. It is particularly valuable in the course of acute articular rheumatism as it may give warning in time for intensive treatment to save damage to the heart.

Semaine Médicale, Paris

March 26, XXXIII, No. 13, pp. 145-156

60 *Clinical Forms and the Diagnosis of Syphilitic Cerebellar Hemiplegia. P. Marie and C. Foix.

60. **Syphilitic Cerebellar Hemiplegia.**—Marie and Foix have recently published a study of the common basis for the symptoms and signs of syphilitic cerebellar hemiplegia, and they now analyze the different manifestations which are encountered with lesions at different levels and of different degrees of severity. The article is accompanied by seventeen illustrations, with reports of typical cases. The lesions causing the disturbance are grave from the standpoint of the functional prognosis, but do not seem otherwise threatening except from the serious fact that they were always accompanied by a syphilitic meningitis, manifested by lymphocytosis in the cerebrospinal fluid during life and by the necropsy findings. This active meningitis is fraught with grave danger both in itself and by its aggravating influence on the cerebellar processes. In any event they say, vigorous antisyphilitic measures are needed to arrest, if possible, the active process although irreparable lesions already installed are beyond relief. The writers warn to search for the minor signs of a cerebellar lesion in every nervous affection, seeking confirmation by the findings of lumbar puncture.

Archiv für klinische Chirurgie, Berlin

C, No. 4, pp. 939-1192. Last indexed March 22, p. 947

61 *Why Living Tissue is Not Digested by Gastric Juice. (Zur Entstehung des Magengeschwürs.) M. Katzenstein. To be continued.

62 Fascia Hammock for Nephropexy. (Nephropexie vermittelst transplantativer Bildung einer fascialen Aufhängekapsel.) K. Henschen.

V. 6
1913

63 Choledochoduodenostomy. F. Sasse.
64 *Experimental Research on Surgery of the Lungs. E. Schepelmann.
65 Substitution of Segment of Vein. (Ueber Ersetzung eines Stückes der Vena cava inferior durch frei transplantirte Vena jugularis externa desselben Thieres.) E. Jeger and W. Israel.
66 *Advantages of the Whitehead Operation for Hemorrhoids; 223 Cases. S. Hadda.
67 Varices in Japan. (Häufigkeit der Varicen am Unterschenkel bei Japanern und der Erfolg einiger operativ behandelter Fälle.) K. Miyauchi.
68 *Hernias in 279 Cadavers. (Zur Casuistik der Hernien.) P. Bernstein.
69 *Direct Drainage of Ascites Into Saphenous Vein. (Die directe Dauerdrainage des chronischen Ascites durch die Vena saphena in die Blutbahn.) Döbbertin.
70 Fascia Lata for Plastic Operations. (Ueber die freie Plastik der Fascia lata.) H. Lucas.
71 Teratoma of Upper Jaw. (Fall von Teratom des Oberkiefers—Epignathus.) S. Goto.
72 Pathology of Undescended Testicles. (Pathologie der Hodenretention.) O. Uffreduzzi.
73 Cancer of Liver in Male Infant of Seven Months. (Fall von primären Lebercarcinom im Säuglingsalter.) G. Idzumi.
74 Hour-Glass Gall-Bladder. (Fall von grosser congenitaler sanduhrförmiger Gallenblase.) R. Tolda.

61. **Why Does Not the Stomach Digest Itself?**—Katzenstein has been conducting research to answer this question, the results confirming the assumption that tissues used to the action of gastric juice become resistant to it by some process of adaptation. He found that it was possible to induce or check the digestion of a part of the intestine brought up into the stomach. This promoting or inhibiting action on the digestion of the implant was realized by modifying the food to stimulate or depress the production of gastric juice. A constant vegetable diet depressed the gastric secretion, and this same effect was obtained with injection of atropin, while the digesting process in the dogs was promoted by a single meal, consisting of meat. When a wisp of stomach, of duodenum tissue and of a lower loop of the small intestine were all drawn up and fastened in the stomach, the stomach tissue and the duodenum tissue were not destroyed by the gastric juice while the lower loop was invariably digested. The account of the extensive research is to be continued.

64. **Experimental Surgery of the Lungs.**—Schepelmann's experiments were carried out on rabbits without regard to the clinical availability of the methods applied, but certain of them have some bearing on the clinic so he reports them in detail. His results with division of the phrenic nerve in the neck were encouraging; by this means the apex of the lung is excluded from participating in the excursion of the rest of the lung and thus the procedure answers the same purpose as Freund's chondrotomy and artificially induced pneumothorax. His article is profusely illustrated and shows the effects of amputation of a lung, with or without phrenicotomy, as he calls division of the phrenic nerve. In other experiments he resected part of the diaphragm and found that this led to compression of the corresponding lung. The lung becomes immobilized and compressed by the pressure of the contents of the abdomen, and this resection of the diaphragm is a simple and easy operation on animals at least. His conclusions are that for mild apical processes not absolutely amenable to internal treatment, resection of the phrenic nerve in the neck might be considered as an extremely simple operation, perfectly well tolerated, which has the effect of immobilizing the lung on that side and at the same time inducing a tendency to thicken it.

66. **Whitehead's Operation for Hemorrhoids.**—Hadda summarizes the details of 223 cases in which he has applied this technic with eminently favorable results, and commends it as superior to all other methods for treating hemorrhoids. When it does not perfectly accomplish its aim, the trouble is that Whitehead's directions were not followed implicitly.

68. **Hernia.**—Bernstein has been examining 279 cadavers for the presence of hernia or predisposition thereto. Positive findings were obtained only in 25.8 per cent.; that is, in seventy-two cadavers, only twenty-one in this group being females. He discusses these findings from various standpoints.

69. **Permanent Drainage of Ascites Into Saphenous Vein.**—Döbbertin mobilizes the saphenous vein in the upper third of the thigh and draws it up through a passage made under the skin directly into the peritoneum, thus diverting the ascitic fluid directly into the circulation. He feared at first that blood would escape from the vein into the peritoneum, but found that this never occurred as the attraction of gravity aided in the evacuation of the ascitic fluid. The procedure is very simple and harmless, as he describes with several illustrations, and it is applicable not only where the Talma operation is indicated but also with stasis in the portal circulation, hypersecretion from carcinosis, inoperable ovarian tumors, etc. He regards it as a physiologic process, providing a passage back into the blood of the fluid which came from the blood. The fluid drains away at once after the operation without the necessity for waiting for a collateral circulation to develop, as with omentopexy.

Beiträge zur klinische Chirurgie, Tübingen

January, LXXXII, No. 3, pp. 475-702

75 Influence on the Thyroid of Artificial Stenosis of the Trachea. A. Reich and Blanel.
76 Stenosis of the Trachea of Thymic Origin. E. Hoeniger.
77 Ligation of the Carotid. (Zur Unterbindung der Carotis communis.) F. Smoler.
78 Congenital Inherited Ankylosis of the Interphalangeal Articulations. K. Morgenstern.
79 Wound Diphtheria and Diphtheroid. J. Zulieg.
80 Acute Pancreatitis. F. v. Faykiss.
81 External Supravesical Hernia. W. v. Steimker.
82 Lateral Ventral Hernia. W. v. Steimker.
83 Typical Fractures of the Atrophic Femur. M. Brandes.
84 Cecum-Small Intestine Volvulus in Incarcerated Hernia. Syring.

Berliner klinische Wochenschrift

March 17, L, No. 11, pp. 477-524

85 *Progress in Treatment of Diabetes in Last Fifty Years. R. Lépine.
86 *Appendicitis in Scarlet Fever. (Zur Kasuistik der Epityphlitis bei Scharlach sowie der wiederholten Scharlacherkrankung.) O. Meyer.
87 Exclusion of Tuberculous Bladder. (Zur Harnblasenausschaltung wegen Tuberkulose.) L. Casper.
88 Colon-Bacillus Suppurative Bladder Disease. (Klinische und serologische Untersuchungen bei Harneiterungen durch Bacterium coli.) T. Cohn and H. Reiter. Commenced in No. 10.

85. **Progress in Treatment of Diabetes in Last Fifty Years.**—Lépine regards as one feature of the progress the emancipation from the too exclusive conception of excessive production of sugar as the essence of diabetes mellitus. Progress in dietetic treatment has been mostly in the recognition of the value of oat meal and similar "cures," and the explanation that they act mainly by transforming the flora in the intestines. The microbes then oxidize part of the sugar formed in the intestines and thus supply the organism with ternary products and reduce the amount of sugar absorbed in the intestines. Drugs are often useful to respond to certain indications, like quinin when a tonic is needed, arsenic or strychnin to keep up the strength; antipyrin by mediation of the nerve centers may reduce the output of urine and of sugar. In the test-tube it acts directly on the liver cells. But on the whole, drugs display little influence on the diabetes itself, except sodium bicarbonate which is indispensable with acetonemia. He has given it by intravenous injection in a number of cases, but it is effectual only when it is given before the coma develops; afterward it may give more or less transient relief. By intravenous injection it acts more thoroughly than by mouth, as it suddenly disturbs the osmotic processes and is thus able to penetrate into the cells and neutralize the toxins directly. He always uses an isotonic solution of sodium bicarbonate. On account of the hydration of the organism a hypertonic solution might be dangerous. Diabetics should exercise but should always carefully refrain from getting fatigued to exhaustion. Especially with acetonemia, any fatigue is injurious. Operations on diabetics should be avoided as much as possible on account of the danger from the tardy action of the anesthetic, especially on the liver. With gangrene, superheated air baths (at 300 C.) twice a day for thirty or forty-five minutes will mummify the

tissues and enable the amputation to be done under comparatively favorable conditions. With gangrenous phlegmons, however, not an hour is to be lost; amputation should be done at once and high up, the pus having a tendency to work through the tendon sheaths much higher than one would suppose possible. He adds that diabetes is becoming more frequent in certain cities, especially in Berlin, but the mortality is growing less as we understand better how to manage the cases.

86. **Appendicitis in Scarlet Fever.**—Meyer reports three cases of true appendicitis developing in the closest connection with scarlet fever or measles. In three other cases pneumonia developed with symptoms suggesting exclusively appendicitis, but the course of the cases revealed the true source of the disturbances and the pseudo-appendicitis subsided. In the first group, one child had the acute appendicitis as part of a typical scarlet fever, but it subsided under medical measures, dieting and staying in bed. Ten months later exactly the same syndrome returned anew, the typical scarlet fever and acute appendicitis, but the attack lasted only a few days. Meyer cites a few cases on record of second attacks of scarlet fever. Henoch has encountered only one case in his extensive experience, Heubner none, but Baginsky has reported a case with three attacks. Szontagh alone does not regard a second attack as very unusual, and Weissenberg has known of seven cases. Meyer remarks that it is possible that repeated attacks occur more frequently than supposed and escape recognition. It is possible that the febrile sore throat with general symptoms which the father had each time the children had their attacks of scarlet fever, may have been masked scarlatina. This was beyond question, he thinks, in another case in which the mother developed sore throat and high fever with albuminuria and earache after her children had had a siege of scarlet fever.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 1, XLIII, No. 9, pp. 257-288

89 *Etiology and Treatment of Osteomalacia and Rachitis. S. Stocker.

90 *Arteriomesenteric Occlusion of the Intestine. (Zur Kenntnis des arteriomesenterialen Darmverschlusses.) K. Bollag.

March 15, No. 11, pp. 321-352

91 Differentiation and Importance of Arhythmias. (Die Erkennung und Bedeutung der Arhythmien.) (R. Stähelin.

March 22, No. 12, pp. 353-384

92 *Psychic Anorexia at Puberty. L. Schnyder.

93 Changes of Shape of Tubercle Bacilli in Sputum. (Der Wechsel der Tuberkelbazillenformen im phthisischen Sputum. A. Kirchenstein.

89. **Treatment of Osteomalacia and Rachitis.**—Stocker reviews his experimental research based on the assumption that osteomalacia is the result of excessive or perverted functioning of the ovaries. He experimented with rabbits, calves and dogs, and implanted in the preperitoneal tissue ovaries from other animals of the same species, thus inducing an extra supply of the ovarian internal secretion. The results were negative in rabbits and he knows of no record of osteomalacia ever occurring in these animals. In the calf, signs of pronounced softening of the bones were evident in five months and in the dog, after implantation of testicles, the same picture of softening of the bones was soon presented. There seemed to be no doubt that the implants continued to secrete, and that thus the excess of hormones from the sexual glands influenced the metabolism to such an extent that the bones remained soft, that is, that the excess of hormones inhibited the ossification processes. The softening of the bones resembled in every respect the finding in rachitis and osteomalacia. These two affections must therefore be regarded as a consequence of hypersecretion of the genitals or of certain parts of them. We have no means to check the secretion of these glands, but we can counteract their action by supplying from without a larger amount of the antagonistic hormones, to restore the balance between the internal secretions. This has been realized by Bossi with epinephrin in osteomalacia; Bab has reported equal success with hypophysis extract, and Stocker himself obtained notable improvement in one case with thyroid treatment. If the extract of one of the organs with an internal secretion does not benefit, try another, he says. Until we are better informed, this empiric method of treatment is the only one at our disposal. Fraenkel reported in 1908 a cure of osteomalacia in a patient given the milk of a castrated goat. This was suggested by the benefit realized in exophthalmic goiter from the serum of thyroidectomized sheep: In consequence of the removal of the gland in question the antagonists secrete more of their hormones. As these circulate in the blood they can have a therapeutic action. The principle of treatment is therefore the same as the administration of an organ extract. Stern has also reported a case of osteomalacia in which this treatment gave fine results. Stocker has given the milk of castrated cows in two cases of rachitis; one patient was very favorably influenced and the other is much improved. He suggests that the serum of castrated bulls should be used for rachitis and osteomalacia in males.

90. **Arteriomesenteric Ileus.**—In the case reported by Bollag the arteriomesenteric occlusion of the intestine was chronic, that is, it recurred periodically, and he thinks that it was the result of the pronounced lordosis of the spine. While the patient was leading a normal life the condition caused only slight trouble at times, but gradually grew more chronic, the pressure from the stomach growing greater as also the traction on the root of the mesentery. This was revealed by occasional vomiting but as long as the patient was up and about the passage became permeable after the stomach had been relieved by vomiting. Then the patient fractured her femur and was confined to her bed for some time, the conditions then favoring total obstruction and the woman succumbed, deriving no benefit from postural treatment or other measures. The diagnosis of the case was made during life from the uncontrollable vomiting, the immense size of the stomach, the lack of pain, the small, rapid pulse with comparatively slight rise in temperature, the intense thirst, the severe general depression, the ileus, and the lack of distention of the lower abdomen. It is possible that a gastrojejunostomy might have saved the patient, but the general condition was too bad to permit this.

92. **Psychic Anorexia.**—Schnyder refers in particular to the passive and active anorexia at the age of puberty. He regards it as a more or less fundamental disturbance of the instinct of self preservation.

Medizinische Klinik, Berlin

March 16, IX, No. 11, pp. 397-440

94 Myopia and Its Treatment. M. Sachs.

95 General Principles for Treatment of Heart Diseases. M. Herz.

96 *Skin Diseases and Dietetics. (Ueber die diätetische Beeinflussung der Hautkrankheiten.) H. Hübner.

97 *Epinephrin in Treatment of Arthralgia and Neuralgia. (Ueber antiarthralgische und antineuralgische Wirkung des Adrenalins.) F. Gabbioek.

98 Serodiagnosis of Syphilis at Ophthalmic Clinic. (Die Luetinreaktion nach Noguchi bei Augenkrankheiten.) A. Löwenstein.

99 Atresia of the Duodenum. W. Weber.

100 Tests for Blood in the Stools. (Ueber die klinische Brauchbarkeit der üblichen chemischen Blutproben an den Faeces.) E. Schlesinger and J. Jagielski.

96. **Dietetic Influencing of Skin Diseases.**—Hübner says that the skin diseases of infants must be regarded from another standpoint than those of adults. The infant intestine is more permeable than the adult's, and eczema, especially the seborrheic type, is frequent in overfed, overfat babies. Fat seems to be the element of the diet that should be avoided in this case, and milk can be replaced by whey or buttermilk. According to the experience of many, eggs are not tolerated well by eczema children; some writers advise sterilizing the milk to check bacterial action in the intestines. Even those who deny a connection between eczema and the diet must admit that the folds in the skin under the joints of these overfat babies invite eczema, and thus reduction of the food is useful from this standpoint if from no other. Finkelstein's idea that eczema is due to excess of salt in the food has less to sustain it. In any event, external measures are of great importance, and Hübner protests against the fear of "driving in the eczema" by external treatment. All the cases on record of alleged "eczema death,"

V. 6
1913

he says, have proved to be due to other, easily explainable causes. The masters insist unconditionally on local treatment of the eczema; the cases published as "fatal driving in of the eczema" were cases of "thymus death" or heart failure or fulminating sepsis occurring in children who happened to have eczema at the time. Regulation of the diet is useful also in strophulus infantum, along the same lines as in eczema, reduction of the total amount, addition of cooked fruits to the diet, and possibly mild laxatives. The mere change from too exclusive meat diet to a more predominantly vegetable diet will often suffice alone. Prurigo, on the other hand, occurs in children who are insufficiently fed or tuberculous, and the diet must be of a strengthening nature. Any attempt to reduce it or to make it mainly vegetable can do only harm. Urticaria in adults is frequently traceable to a certain article of diet, but no other skin affection in adults shows such a connection although the laity generally assume this for seborrheic acne and ask for something to "purify the blood." There is more sense in avoiding fats and especially fats with a low melting point as liable to solidify and clog the sebaceous glands, particularly mutton fat. No benefit seems to have been derived from diet in psoriasis, but with pruritus ani it is well to refrain from spices, pepper, etc., liable to irritate as they are passed with the stools. Even tea and coffee are liable to prove irritating in this way. Jessner has reported cases in which the pruritus vanished on abstention from tea and coffee. They evidently irritate the nerve terminals and hence should be avoided in all skin affections accompanied by itching, and particularly in senile pruritus.

97. **Epinephrin in Neuralgia and Arthralgia.**—Gaisböck reports the details of seventeen cases out of a more extended experience in which prompt and durable benefit was derived from adrenal medication. He gave a subcutaneous injection of 1 c.c. of 1 to 1,000 solution of epinephrin (adrenalin, Parke-Davis) repeating the dose until 24 c.c. had been injected in the first case. The results observed confirm the assumption that adrenal medication has a favorable, even a curative, influence on inflammatory processes in joints, more or less independent of their special origin, and neuralgic affections also are favorably influenced by it. This opens up a new field for therapeutics with epinephrin, interesting alike for the practitioner and the theorist. In its action in this respect epinephrin takes rank as an antineuralgic, and it is interesting that certain antineuralgics have also an influence on asthma, probably from the regulation of the circulation which they induce. This is sufficient to explain the favorable action of epinephrin in osteomalacia, in asthma and in the arthritis cases. The magic way in which the epinephrin relieved a patient with osteomalacia first suggested to Gaisböck its use in neuralgia and arthritis. The typical cases of the latter described were in adults from 16 to 72, in fourteen of the cases the trouble was acute arthritis, in two others sciatica; distinct improvement was evident after a few injections. No benefit was derived by two girls with arthritis possibly due to sepsis, and no influence was apparent in the cases of deforming arthritis. No lasting untoward by-effects were observed in any instance, and nothing to suggest that the coagulating power of the blood had been increased. In four cases of ordinary polyarthritis the patients recovered without complications; in two others there were signs of fibrous pericarditis from the start.

Monatsschrift für Kinderheilkunde, Leipsic

XI, No. 11, pp. 545-620

101 *The Care and Treatment of Infants in Institutions. (Erfahrungen und Gedanken über Anstaltsbehandlung der Säuglinge.) A. Schlossmann.
102 Action on Human Milk of Shaking Up. (Wirkung der mechanischen Erschütterung auf die Frauenmilch.) S. Engel.
103 Influence of Artificial Pneumothorax on the Mechanism of Respiration in Children. (Einfluss des künstlichen Pneumothorax auf die Atemmechanik des Kindes.) R. P. van de Kasteele.
104 Infant Mortality in 1911. (Die Säuglingssterblichkeit im Grossherzogtum Mecklenburg-Schwerin 1911.) H. Brüning.

101. **The Care and Treatment of Infants in Institutions.**—Schlossmann took charge of the infants' asylum in Düsseldorf in 1906. For a period of four years preceding that time the admissions had been 165, deaths 118, showing a mortality of 71.5 per cent. For the five years following the admissions were 238, deaths 40, mortality 16.8 per cent. In the children's hospital of Düsseldorf for the past five years there have been 1,284 admissions with 317 deaths, or 24.69 per cent. Seventy per cent. of these died within a week after admission, showing how extremely bad their condition was on admission. He concludes that institutions do not necessarily have a bad effect on the health of infants—that there is no such thing as "hospitalism." There are four factors that enter into the production of the condition so-called: insufficient or inefficient medical attention and nursing, bad surroundings and insufficient or improper feeding. The head physician's entire time should be devoted to the institution and he should be always on call. The importance of good nursing should be recognized and abundantly provided for. Sick children should be immediately transferred to the hospital, where everything is arranged for the care of the sick. In this way too the spreading of contagion is avoided. The building should be well lighted and well ventilated and provided with sleeping-porches, so that as much time as possible is spent in the open air. Some children on admission are too far gone to be saved by any food; others can tolerate only breast milk. For those who can bear artificial feeding at all, he thinks diluted cow's milk with a little milk sugar added is the best food. The most important point to determine is how much the child can take. A child that cannot take small quantities of half milk can probably not stand any artificial food. In institutions where the most careful attention is given to medical supervision, nursing, hygienic surroundings and feeding, the death-rate can be kept as low as or lower than that in the community as a whole. Needless to say sufficient financial support must be given to render such care possible, and to secure such support the public must understand and sympathize with the needs of its unfortunate children.

Münchener medizinische Wochenschrift

March 18, LX, No. 11, pp. 569-624

105 Metabolism of Albumin in Fever. (Die Stellung des Eiweisses im Stoffwechsel des fieberndes Menschen und ihre theoretische und praktische Bedeutung.) E. Grafe.
106 *Chronic Appendicitis. A. Krecke.
107 *Utilization of Forces of Respiration in Treatment of Scoliosis. H. Spitzy.
108 Mechanism of Development of Slan[illegible] Pelvis. (Die Entstehungsweise übermässiger Beckenneigung.) J. Fränkel.
109 Pylorospasm. K. Glaessner and S. Kreuzfuchs.
110 Ferments in Serum of the Insane. (Zur Frage des Vorhandenseins spezifischer Schutzfermente im Serum von Geisteskranken.) A. Fauser.
111 Unreliability of Dialysis Technic for Serodiagnosis of Pregnancy. (Zur biologischen Diagnose der Schwangerschaft.) E. Engelhorn.
112 *Advantages of Phenolsulphonephthalein Test for Kidney Functioning. (Die Nierenfunktionsprüfung mittels des Phenolsulphonphthaleins.) F. Fromme and C. Rubner.
113 Polyps in Rectum or Sigmoid Flexure. (Ueber gutartige Polypen des Mastdarms und des S. romanum.) Decker.
114 Serodiagnosis of Syphilis Applied to Cerebrospinal Fluid. (Anwendung der Hermann-Perutzschen Reaktion bei der Prüfung von Lumbalpunktaten.) F. Lade.
115 *Mushroom Poisoning by Inhalation. (Auch eine "Pilzvergiftung.") Dreisbach.
116 Serodiagnosis of Syphilis. (Ist die Ausführung der Brendel-Müllerschen Reaktion durch den praktischen Arzt empfehlenswert?) A. Pöhlmann.
117 Psychoneuroses. R. Neupert. Commenced in No. 10.

106. **Chronic Appendicitis.**—Krecke seeks to distinguish true appendicitis from the syndrome induced merely by dread or imitation. After the illness or death of a prominent person from appendicitis, many persons apply to physicians claiming to have symptoms of appendicitis; the so-called familial appendicitis, is probably, he thinks, an epidemic from suggestion. In chronic appendicitis he has frequently found that there must have been some acute phase at some time which escaped recognition, the patient being treated for typhoid, dysentery, etc. Another fact he has learned from experience is that the appendix can return to an entirely normal condition after acute inflammation. He has been reexamining lately twenty patients whose appendices were removed over at least a year ago. All but five patients were women. The symptoms

indicated chronic appendicitis and yet nothing pathologic could be found in the appendix. Fully 85 per cent. were entirely cured by the appendicectomy but three state that their former disturbances still continue. The trouble must have been a more general bowel affection, not restricted to the appendix region. In seventy cases of chronic appendicitis traced to date, he found that 70 per cent. of the patients had been cured by the operation but no relief had been experienced in 30 per cent.; the appendix was diseased only as part of a more general disease of the large intestine. The symptoms presented by this latter group of patients were pains in the right iliac fossa, not very violent but radiating to other parts of the abdomen, with disturbances in defecation and tenderness in the right iliac fossa with resistance and roentgenoscopic delay in the digestion in the cecum. Another feature which suggests that more of the intestine is involved than merely the appendix, is the character of the pains which are a sense of oppression or discomfort rather than the boring or stabbing pain of appendicitis. With appendicitis the pains are localized in the iliac fossa while with colitis they spread over the entire abdomen and are more constant than with appendicitis. Exacerbation from physical effort and from menstruation speaks more for general bowel trouble; the pains of appendicitis are generally independent of external influences. Constant tenderness at McBurney's point speaks for chronic appendicitis while constant tenderness at other points is a sign of chronic disease elsewhere. He adds that with chronic appendicitis, especially the recurring form, there is frequently no tender point anywhere. A resistance in the ileosacral region indicates participation of the colon as also constipation, intestinal fermentation and admixture of mucus with the stools. This colitis can be either the consequence or the cause of chronic appendicitis. If the disturbances improve under physical and dietetic measures, appendicitis can generally be excluded. A tendency to nervous disturbances also speaks against a localized appendicitis. In any event, the patient should be examined several times, and with special regard to the psychic behavior; with other symptoms of hysteria or neurasthenia one should be guarded with the diagnosis of chronic appendicitis. If you learn that the patient has a special dread of appendicitis or there has been a case in his immediate circle of acquaintances, the diagnosis should be even more reserved. In such cases it is better to say "I do not find anything just now suspicious of appendicitis. But I advise you to send for a physician at once if the pains increase in intensity."

107. **The Forces of Respiration in Treatment of Scoliosis.**—Spitzy here describes how best to utilize the forces of gravity and of respiration in treatment of scoliosis, in which Abbott seems to have led the way. He has applied Abbott's method in fourteen cases in the last six months and states that the results were "much, much better" than with any other method tried in the course of many years. His article is a preliminary to Abbott's presentation of the subject at the approaching German orthopedic congress.

112. **Phenolsulphonephthalein Test for Kidney Functioning.**—Fromme and Rubner state that intramuscular injection is liable to give misleading findings. They regard the test as important but reliable only when the intravenous technic is followed. With this from 60 to 65 per cent. of the drug is eliminated by healthy kidneys in three hours, and usually the proportion eliminated is much larger in this period, even up to 90 per cent. in some cases.

115. **Mushroom Poisoning.**—Dreisbach has encountered several cases of epidemic headache and joint pains with fever and other signs of severe infection, following close on a few days of thrashing. He is convinced that the trouble is due to the dust from mushrooms or moulds in the dust thrown up by the thrashing machine. Mere irritation from indifferent dust could not explain the severe symptoms observed.

Wiener klinische Wochenschrift, Vienna

March 13, XXVI, No. 11, pp. 401-444

118 *Milk Differentiation of Spastic Strictures in Stomach and Duodenum. (Ueber das Verhalten verschiedenartiger Strikturen im Magen und Duodenum bei Milchdiät.) S. Jonas.

119 *By-Effects with Salvarsan from the Glass of the Vials. (Durch Alkaliabgabe des Glases bedingte toxische Nebenwirkungen nach intravenösen Salvarsaninjektionen—Glasfehler.) R. Matzenauer.

120 The Skin Reaction in Syphilis and its Relation to the Wassermann Reaction. (Die Hautreaktion bei Lues und ihre Beziehung zur Wassermannschen Reaktion.) R. Müller and R. O. Stein.

121 *From the Seat of War. (Kriegschirurgische Erfahrungen vom montenegrinisch-türkischen Kriegsschauplatz.) O. Heinz.

122 Seaside Sanatorium for Children. (Dauererfolge und Schicksale von im Seehospize zu Triest 1896-1903 behandelten Brunner Kindern.) E. Homa.

123 *Tabes in the Young. H. Barkan (San Francisco).

124 *Choice of Occupation with regard to Tuberculosis. (Fürsorge bei der Berufswahl mit Rücksicht auf die Tuberkulose.) L. Teleky.

118. **Diagnosis of Spastic Strictures in Gastro-Intestinal Tract.**—Jonas calls attention to the fact that a stricture in the stomach or duodenum is modified by restriction to a milk diet just as the underlying lesion is modified. That is to say, strictures from scar tissue, adhesions or tumors show no change, while spastic reflex strictures from the irritation of an ulcer subside on a milk diet as the exposed nerves escape irritation when the food is restricted to milk, and hence the reflex spasms cease to occur. When the symptoms of the stricture subside on a brief restriction to milk, the assumption of a causal ulcer is justified. Negative conclusions, that is, persistence of the stricture phenomena on a milk diet are not conclusive as to the non-existence of an ulcer. Roentgenoscopy before and during restriction to milk gives instructive findings. He allows the patient only milk or cream cheese until the milk with six-hour intervals is borne without pain. Then roentgenoscopy is applied again and if the signs of the stricture have subsided, the assumption of an ulcer as the cause of the previous stricture is justified. He does not keep up the milk diet longer than a week. When there is no residue in the stomach after six hours, during this milk course, the diagnosis of a causal ulceration is the more probable the larger the amount of residue before the restriction to milk, and the shorter the interval before it disappears.

119. **By-Effects From the Glass in Giving Salvarsan.**—Matzenauer ascribes to the action of alkali from the glass in the vials certain by-effects observed during intravenous injection of salvarsan. He thinks that this "glass error" is responsible for certain untoward effects in salvarsan treatment.

121. **From the Seat of War.**—Heinz was in charge of a Red Cross expedition to Montenegro, and describes his surgical experiences in 159 cases. The men had been wounded mostly in outpost skirmishes. Among the wounded were seven women. Five had been injured at one time by shrapnel as they were bringing supplies to the front. He states that this task was in the hands of the women and it was no uncommon sight to see supply wagons in trains miles long, driven only by women and children. Fully 60 per cent. of the twenty cases with shrapnel wounds went on to suppuration.

123. **Tabes in the Young.**—Barkan reports from Fuchs' clinic three cases of tabes in children of 9 to 16, comparing them with three others in the children of one family in which the father was syphilitic, the mother apparently free from syphilis. Only one case of juvenile tabes is on record with necropsy findings, which indicates that the young are resistant. Atrophy of the optic nerve has developed in 80 per cent. of the cases on record and the Wassermann reaction is positive in a much larger proportion than in adults. The Romberg sign and ataxia are less frequent in the children. Mercury does not arrest the progress of the tabes but seems even to have accelerated it in some cases. It seems wisest to place such children in a blind asylum early, where they can be trained in work for the blind before their vision is entirely lost.

124. **Choice of an Occupation from the Standpoint of Tuberculosis.**—Teleky expatiates on the lack of participation of physicians, as a rule, in the solving of the great sociologic problems, when they are the very ones who should take the lead in social hygiene. A very important task in this line is the guidance of the wage-earning youth in the choice of a trade. He insists that wage-earning should not begin before

V. 6
1913

the age of 16, and that the change from school to trade should not be sudden and complete but there should be a period of gradual adaptation. The state should provide manual training institutions where at least the predisposed and the weakly should be gradually habituated to work. Kaup demands for every wage-earner under 18, restriction to ten hours' work, including the free hours, at least three half days a week for physical training and athletics, and a two-weeks vacation every year. But still more important is the necessity for consultation with a physician before starting in on any occupation. Even under present conditions much could be accomplished by medical advice as the children leave school.

Zeitschrift für Kinderheilkunde, Berlin

VI, Nos. 1, 2 and 3, pp. 1-252. Last indexed March 15, p. 873

125 *The Eruption in Measles. (Das Bild der Masern auf der äusseren Haut.) C. v. Pirquet.
126 Abdominal Purpura. (Zur Frage der Purpura abdominalis—Henoch.) R. Lederer.
128 *No Reflux of Pancreatic Juice Into the Stomach of the Infant. (Zur Frage des Rückflusses von Pankreassaft in den Magen des Säuglings.) A. Reiche.
129 The More Active Metabolism of the Child. (Der grössere Stoffverbrauch des Kindes.) M. Kassowitz.

125. **Distribution of the Skin Eruption in Measles.**—Von Pirquet studied forty-six cases of measles with a view to determining the distribution of the eruption and its causes. He marked the exanthematous areas from day to day and the figures are reproduced in his article. He concludes that the eruption is an antitoxic reaction to the organisms causing the disease, which are located in the capillaries. The organisms are agglutinated and the eruption appears when the capillaries of a given region become saturated with antibodies. This saturation takes place first in the regions having the most abundant blood-supply, such as the mucous membranes and the regions near the heart and large blood-vessels. Gradually the organisms are removed from the circulation by agglutination. By the time the parts with a less abundant blood-supply, such as the elbows, feet and nates, have developed sufficient supply of antibodies, there are no longer any organisms to agglutinate; therefore those parts show no eruption. The monograph has 456 illustrations from his original drawings, fourteen other illustrations and eight colored plates.

128. **No Pancreatic Juice in the Infant's Stomach.**—It has been demonstrated that in the adult there is a flow of pancreatic juice into the stomach. Reiche made tests with twenty-three children from six weeks to one and one-half years of age to determine whether the presence of pancreatic juice in their stomachs could be demonstrated. It was not found in any case so there normally can be no digestion of fat and albumin in the stomach by the aid of the pancreatic juice.

Zentralblatt für Chirurgie, Leipsic

March 22, XL, No. 12, pp. 417-456

130 *Absorption by the Pleura. (Ueber Pleuraresorption.) Boit.
131 *Management of Pyelotomy Wound. (Wie soll man die Pyelotomiewunde behandeln?) R. Bastianelli.
132 *Disadvantages of Exclusion of the Appendix. (Ausschaltung des Wurmfortsatzes.) F. Steinmann.

130. **Absorption by the Pleura.**—Boit injected saline into the pleural cavity of dogs, with or without 1 per cent. of some stain, or olive oil, to study the power of absorption. Almost immediately after injection of the fluid on one side, it was evident in the other side, and it proceeded to accumulate slowly in the lower portions of the pleural cavity. A few minutes after injection into the right pleura of 50 c.c. of the stain, the entire pleural cavity on the other side was stained a deep tint with it. The lymphatics convey rapidly the fluid into the mediastinum, and the lymph in the thoracic duct was already stained when it was opened twenty minutes after injection of the stain. The experimental findings suggest the possibility that in clinical cases infection of one pleura may be transmitted to the other side by way of the mediastinum.

131. **The Wound After Pyelotomy.**—Bastianelli declares that the incision in the kidney pelvis will heal without suturing unless there is some obstruction in the ureter or very severe infection, and if the wound is not too large or has not ragged edges. At the same time he does not advise systematic refraining from suture. A flap of the adipose tissue drawn up over the incision will protect it. When it is difficult to draw up the kidney he does not loosen up the adipose tissue but cuts directly down on the stone and does not attempt to suture the wound as the fat closes over it and renders a suture unnecessary. It is important to refrain from injuring the fat and to leave a layer intact to draw over the wound.

132. **Exclusion of the Appendix.**—Steinmann reports a case to show the possible evils of leaving the appendix *in situ* after severing it from the cecum, suturing the stumps separately. The part of the appendix close to the cecum was apparently normal in his case, but the rest was impacted in the midst of an inflammatory tumor in which the ileum, omentum and median wall of the cecum were soldered together. The case seemed particularly adapted for exclusion of the appendix as Kofmann has recently recommended, and this was done with exceptional ease, but the previously chronic process flared up into acute inflammation, the appendix perforated, and a fecal concrement further complicated the case, compelling a speedy second laparotomy.

Zentralblatt für Gynäkologie, Leipsic

March 22, XXXVII, No. 12, pp. 409-448

133 *Resection of Promontory to Enlarge the Pelvis. (Verfahren zur Heilung enger Becken.) E. Gerstenberg.
134 *The Crossed-Hands Maneuver to Aid Delivery. (Ein neuer Handgriff—Kreuzgriff—bei Entbindungen.) O. Krug.
135 Primary Sarcoma of Small Intestines. R. Patek.
136 Primary Gastric Cystosarcoma. H. Kondring.
137 *Proportions of Males and Females Born. (Ueber das Verhältnis der Geschlechter.) M. Hirsch.

133. **To Enlarge a Contracted Pelvis.**—Gerstenberg has tried on twenty-three cadavers Rotter's method of chiseling off the promontory to enlarge the internal diameter of the pelvis. This experience has convinced him that the special field for this operation is in connection with artificial premature delivery, and that the method should not be attempted with a true conjugate of less than 8.5 cm. Rotter advocates it for a true conjugate down to 7 cm., and thinks that it will render premature delivery unnecessary.

134. **The Crossed-Hands Maneuver to Facilitate Delivery.**—Krug calls attention to the remarkable force that can be exerted when the hands are placed back to back after crossing them, the backs of the hands serving thus as the levering point for pushing with the fingers. He utilizes this force to spread the articulations of the pelvis as they loosen up during the labor pains, thus magnifying the natural stretching. He introduces his three middle fingers deep into the vagina, down to the inner surface of the right tuberosity of the ischium, the forefinger of the right hand on the ascending ramus of the right tuberosity of the ischium, the middle finger on the edge of the obturator foramen and the third finger on the great sacrosciatic ligament. The fingers of the left hand are introduced in the same way, the hands thus crossed ready to push at the height of the labor pain. As the force is applied only transversely to the pelvis, and as the entire pelvis is slightly lifted up at the same time as the woman lies across the bed with legs spread and slightly pendent, there is not much danger of injury.

137. **Proportions of Males and Females at Birth.**—Hirsch has been surprised to note the unusually large proportion of male fetuses among those in the abortive and premature delivery cases. They far outnumber the females, and he thinks there can be no doubt that the male fetus is more susceptible to injury, including the trauma at birth, than the females, and also that the male fetuses far outnumber the female, irrespective of those that come to normal birth. The proportion of males is larger the shorter the interval since conception. He urges others to study this subject as his findings suggest a new biologic phenomenon of the greatest importance for predetermination of sex and for embryology in general. In order to bear weight hereafter, research on the proportions between the sexes must not be restricted to the children born

but should take into account the sex proportions in embryos. He urges institutions to compile data on this subject, classifying the cases with the length, weight and signs of development of the fetus or embryo; the sex (with young embryos microscopic examination may be necessary); age of the parents; their health (syphilis, nutritional disturbances, heart, kidney or gynecologic disease, deformities and alcoholism); occupation (whether the mother is employed or not); industrial diseases; residence (city or country); food and housing conditions; number of preceding childbirths and abortions (age, health and sex of the children), and, finally, the cause of the death of the fetus. He thinks that compilation of data along these lines will be a great advance toward solving the question of predetermination of sex and other biologic problems.

Policlinico, Rome

March 24, XX, No. 12, pp. 401-436

138 Headache of Thyroid Origin. (Sull' esistenza di una forme di cefalea di origine tiroidea.) G. Bilancioni.,

Riforma Medica, Naples

March 15, XXIX, No. 11, pp. 281-308

139 Physiopathology of the Adrenals. III. (Fisiopatologia delle capsule surrenali in rapporto al morbo di Addison ed alle sindromi surrenaliche.) P. Castellino.

140 Action of Ultraviolet Rays on Cholera and Plague Germs. A. Schiavone and G. Trerotoli.

141 *Acid-Fast Bacilli in the Blood-Stream. (Osservazioni e considerazioni sulla presenza di bacilli acido-resistenti nel sangue circolante.) A. Fagiuoli. Commenced in No. 10.

141. **Tubercle Bacilli in the Blood.**—Fagiuoli remarks in this report of research on the presence of acid-fast bacilli in the blood-stream, that of the thirteen clinically non-tuberculous patients examined with positive results, one had an attack of tuberculous pleuritis four months afterward. He does not regard the acid-fast bacilli in the blood as a sign of active tuberculosis nor as a certain sign of impending tuberculosis, nor as of much import for the diagnosis from any point of view. The bacilli in the blood show that the individual is infected, but whether the bacilli will find lodgment and a chance to proliferate is another question. There did not seem to be any connection in his experience between the numbers of the bacilli and the gravity of the tuberculous process; he found them frequently quite numerous in the incipient cases and very scanty in the well developed. He remarks in conclusion that the new light thrown on the presence of acid-fast bacilli in the blood-stream does not reduce the importance and necessity for the prophylactic measures against tuberculosis already in vogue, but it shows still more urgently than ever the importance of means to enhance the resisting powers of the individual. His findings were constantly positive in seventy-five patients with pulmonary tuberculosis in various stages and in five of six patients with surgical tuberculous lesions, also in thirteen of twenty persons apparently free from suspicion of tuberculosis. He found the acid-fast bacilli also in the urine of four of five tuberculous patients examined, and in two of five apparently free from tuberculosis. The acid-fast bacilli were also constantly present in the pleural effusion from the four patients examined, and in three out of four cases they were discovered in pus from a tuberculous process. Also in the stools from six tuberculous patients. The bacilli thus found constantly in the tuberculous and in 65 per cent. of the non-tuberculous examined were inoculated into guinea-pigs—a total of twenty-six animals—with the result that four of the nine animals inoculated with blood from tuberculous patients and one of the four inoculated with blood from a non-tuberculous individual developed tuberculosis.

Hygiea, Stockholm

February, LXXV, No. 2, pp. 113-192

142 *Cancer in the Jejunum and Ileum. (Om primär krâfta i jejunum och ileum.) B. Carlson.

143 *The "Blotting Paper" Capillary Test for Gastric Secretion. (Om s. k. kapillaranalys af magsaft enligt dr I. Holmgren.) K. Mattisson.

144 *Complications from Roentgenoscopy of Kidney Pelvis. (Fall af pyelografi, där kollargol inträngt i njurens urinkanaler och Malpighi-ska kroppar.) A. Troell.

145 *Local Anesthesia by Aid of Electricity. (Lokalanästesi medelst katafores.) M. Lundgren, A. Schele and B. Svedin.

142. **Cancer in Jejunum and Ileum.**—Carlson adds seven more cases to the forty-three compiled by Schlieps in 1908. Two of the seven new cases were in Carlson's own practice. He discusses the comparative frequency of malignant disease at this point and tabulates the details of the total fifty cases. In fifteen the conditions were too far advanced for operative relief; palliative operations were done in fifteen cases and resection in twelve cases. One of Mikulicz' patients lived afterward for over seven years and one of Schede's for over a year, dying then from pneumonia. In Carlson's resection case the patient is still in good health after six months. Sörensen's patient lived three years after a merely palliative entero-anastomosis. Carlson insists that an exploratory laparotomy is imperative whenever a person is constantly losing flesh without known cause, whether at the cancer age or not, and there is a fixed pain in the abdomen and constipation alternates with diarrhea and there are attacks of colic or slight ileus. The great danger with cancer in the jejunum or ileum is its slow course; immediate danger does not seem impending and as transient benefit is realized from care in dieting, further measures are postponed until too late.

143. **The Blotting-Paper Test for Gastric Acidity.**—Mattisson's conclusions from extensive tests of Holmgren's technic for estimation of the free acid in the stomach content are unfavorable to the reliability of the method: The chances for error are too great and the information afforded too meager.

144. **Complications from Radiography of Kidney Pelvis.**—Troell says that Zachrisson and Jervell have each reported a case of decided injury from a test injection of collargol into the kidney pelvis for radiography. He has also had a case of the kind in his own experience, as he describes in detail, but has been unable to find records anywhere else of similar occurrences. In his case the kidney was removed afterward and it showed that the 7 per cent. solution of collargol, injected to cast a shadow, had penetrated into the parenchyma of the kidney and worked its way into the space between the glomeruli and their capsules. This was the more remarkable as only 6 or 7 c.c. had been injected and the injection had been made very slowly and under weak pressure. The ureter catheter had been introduced for 20 cm. and the patient complained of pain when this amount had been injected so the injection was suspended at once. The patient was a woman of 64; a suppurative process involved part of the kidney, which was removed next day, but the silver salt had backed up into the canaliculi and malpighian bodies even in the sound half.

145. **Local Anesthesia by Aid of Electric Current.**—Lundgren and his coworkers tabulate the findings in a number of cases in which they induced local anesthesia by cataphoresis, sending into the tissues a 10 per cent. solution of novocain in an epinephrin solution (adrenalin). The anesthetic is dropped on a piece of filter paper folded three or four thick or the paper was first impregnated with the solution. The paper pad is cut the size of the electrode and the continuous current was applied at a tension of 110 volts. They give an illustration of the arrangement of the regulator, etc., found most convenient, and state that complete local anesthesia was thus realized in four cases in ten minutes with a current of one milliampere, the anesthesia lasting for an average of sixteen minutes. With a current of two milliamperes, complete anesthesia was induced in eight instances in five minutes and it lasted for an average of eighteen minutes; with two milliamperes in ten minutes in nineteen cases and it lasted for twenty-seven minutes on an average. The sensibility was only partially reduced in seven other cases while in twelve others there was very nearly but not quite total anesthesia. Further experiments with a 5 per cent. solution of cocain in the epinephrin solution answered the same purpose, the anesthesia lasting for an average of thirty minutes, but the skin showed signs of irritation. The novocain proved equally effectual but without any signs of irritation of the skin. They made twenty applications of the cocain and fifty of the novocain solution. The paper pad with the anesthetic was placed under the positive round electrode covering an area of about 3 sq. cm. the other electrode was held in the patient's hand.